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THE NATIONAL GEOGRAPHIC MAGAZINE

APRIL, 1918

CONTENTS

The Gem of the Ocean: Our American Navy
36 Illustrations — Hon. JOSEPHUS DANIELS

Forerunners of Famine
9 Illustrations — FREDERIC C. WALCOTT

An Appeal to Members of the National Geographic Society
2 Illustrations

What Is It to Be An American?
8 Illustrations — Hon. FRANKLIN K. LANE

Forming New Fashions in Food
11 Illustrations — DAVID FAIRCHILD

The National Geographic Society in War Time
5 Illustrations — Major-General A. W. GREELY

The Symbol of Service to Mankind
11 Illustrations — STOCKTON AXSON

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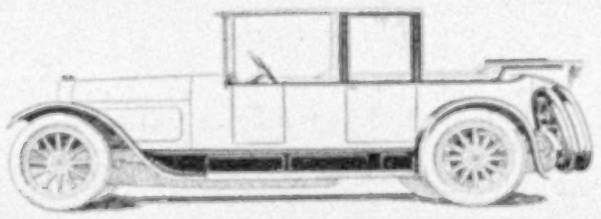

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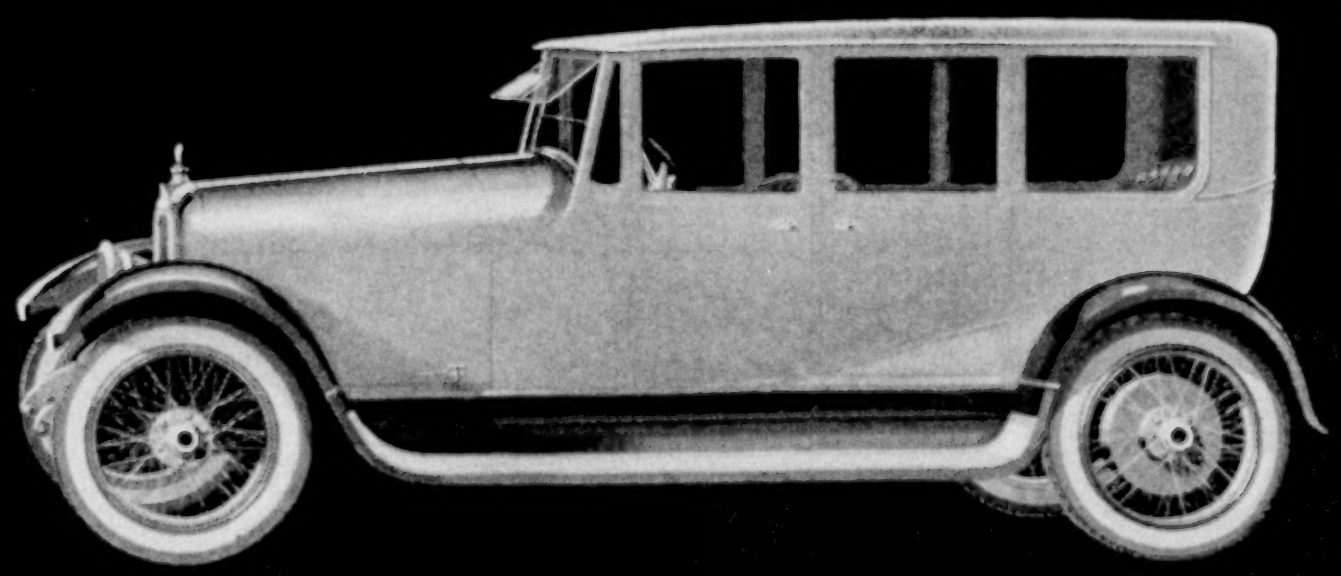

Metals and Minerals that help win the war

A Statement from the U. S. Bureau of Mines

IN this year of 1918 the paramount desire of our country is to accomplish a "great task in a great way." All our attention is focused on great things. We think in billions and millions—men, money, food, ships, guns. Everything looms large to our eyes.

Yet in the background, overshadowed by these more obvious things, are factors which wield a vital influence in shaping the future destiny of our country. Certain metals and minerals, of which the public hears little, are such factors.

Quality as Well as Quantity

Coal, iron, steel, copper, are words on every tongue. But how many of us ever mention manganese, chromium, nickel, pyrite, sulphur, or mercury—all metals or minerals upon which victory largely depends, for they are the metals and minerals that determine the *quality* of our production!

The country must not only manufacture munitions of war in great quantities, but also munitions of the highest quality.

It is not sufficient that we have armored steel vessels; their armor must equal, or be superior to the armor of the vessels of the enemy.

It is not sufficient that we have guns equal in size and range to those of the enemy; they must also be equal, or superior, in the quality of the material from which they are made, in order that they may not fail when most needed.

It is not sufficient that we have an amount of ammunition equal to, or greater than, that of the enemy; it must also equal or surpass the enemy's ammunition in power.

Where These Metals Count

Manganese and ferro-manganese are essential for all high-grade steel production. Without chromium and nickel it is impossible to make the highest quality of linings for our cannon. Mercury is essential to produce fulminate for caps and primers. Sulphur and pyrite are the basic supply of sulphuric acid required to make all explosives.

At the present time this country is sadly deficient in these rare metals. By far the larger portion of them is imported. Yet all of them occur within our borders, and investigation and experimental work would doubtless render them available and make this country independent of all outside sources.

So long as any of these essentials must be obtained from foreign sources, the United States will be to that extent dependent and we should be dependent *in no particular*.

Van. H. Manning

Director United States Bureau of Mines

★ ★ ★

The Hercules Powder Company gives publicity to this important statement by Mr. Manning not only as a patriotic duty but also because of its intimate connection with the matters which he mentions.

This connection is two-fold. Explosives made by the Company play a very large part in producing the ores and metals upon which the country depends for victory in the war.

In turn our production of explosives depends, as Mr. Manning points out, upon the supply of sulphur and pyrite, which is not at present as great as it should be.

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All get an hour of fearful heat, which gives that wondrous flavor. All are shot from guns, and thus changed into bubbles—flimsy, thin, and crisp.

Every food cell is exploded, so digestion can instantly act. They do not tax the stomach, yet every atom feeds.

Remember these things. Puffed grains are superlative grain foods. Food experts wish that every grain could be prepared in this way. No other process ever known so fits a grain for food.

Puffed Rice **Corn Puffs** **Puffed Wheat**

Each 15c Except in Far West

Make them more than breakfast dainties. They are for luncheons, for suppers, for play-time, and for bedtime. They are for eating dry, for mixing with fruits, for the bowl of milk, for soups, or for serving with sugar and cream.

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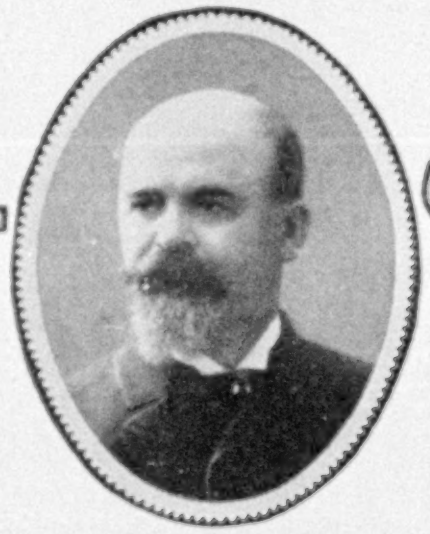

"That attack of dyspepsia of which you are complaining is due to one of two causes:

"Either you have overeaten or you have been working under a nervous strain. For food will not properly digest when you go to your meals with nerves on edge.

"There isn't anything serious about this form of indigestion and the simplest sort of treatment should bring immediate relief.

"For years I always recommended the use of pepsin in such cases until, in later years, when I had put pepsin into chewing gum, I suggested to my patients that they chew a stick of Beeman's Original Pepsin Gum for ten minutes after each meal.

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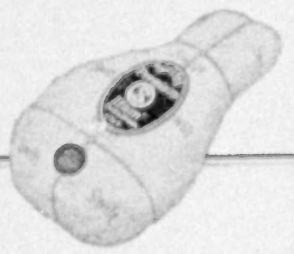

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One War Savings Stamp ($4.16) will feed a soldier or sailor for a week or buy the gasoline for an hour's flight of an airplane.

Three stamps pay for an overcoat or a gas mask.

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Four stamps will manufacture a rifle for one of our boys.

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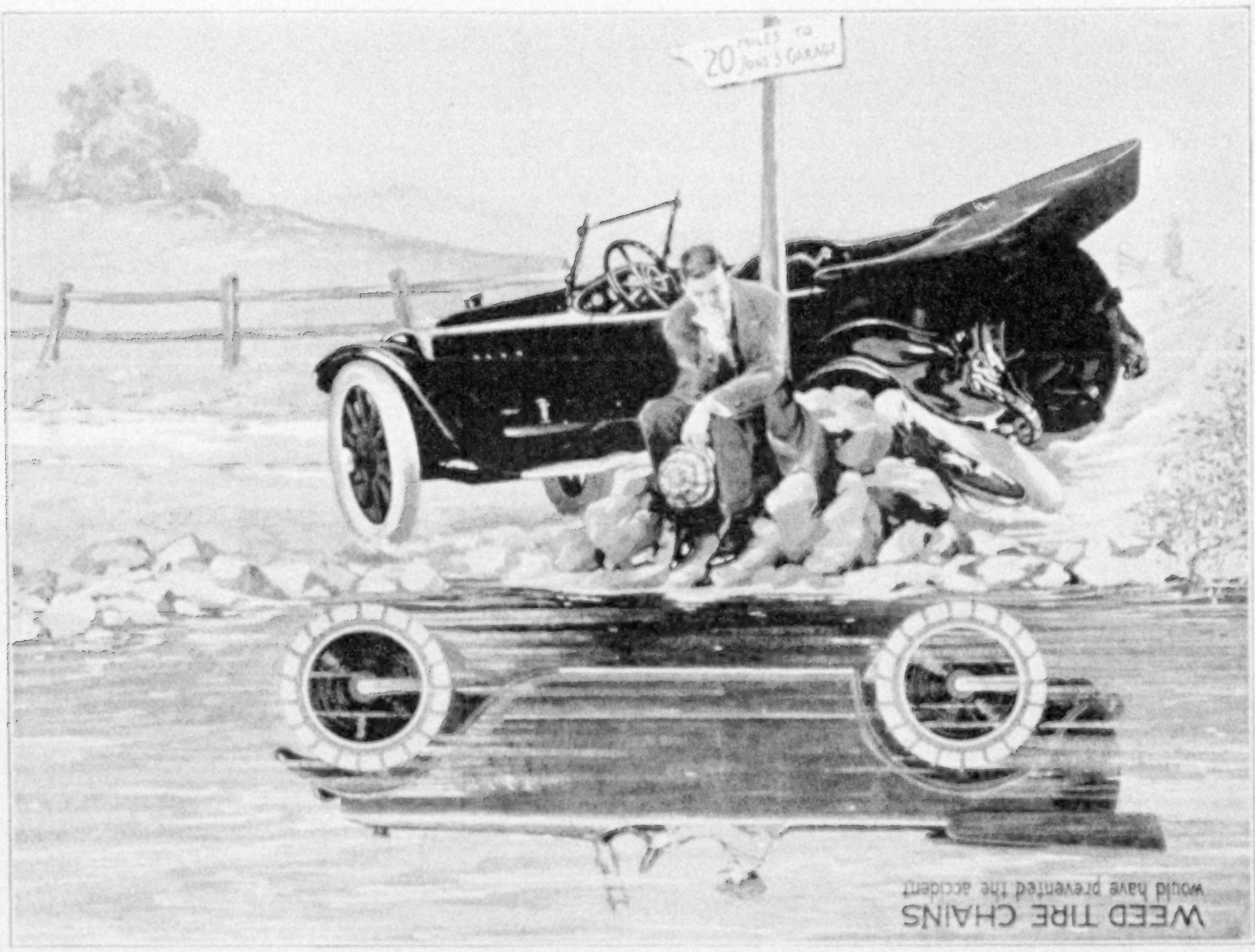

Reflections After the Skidding Accident

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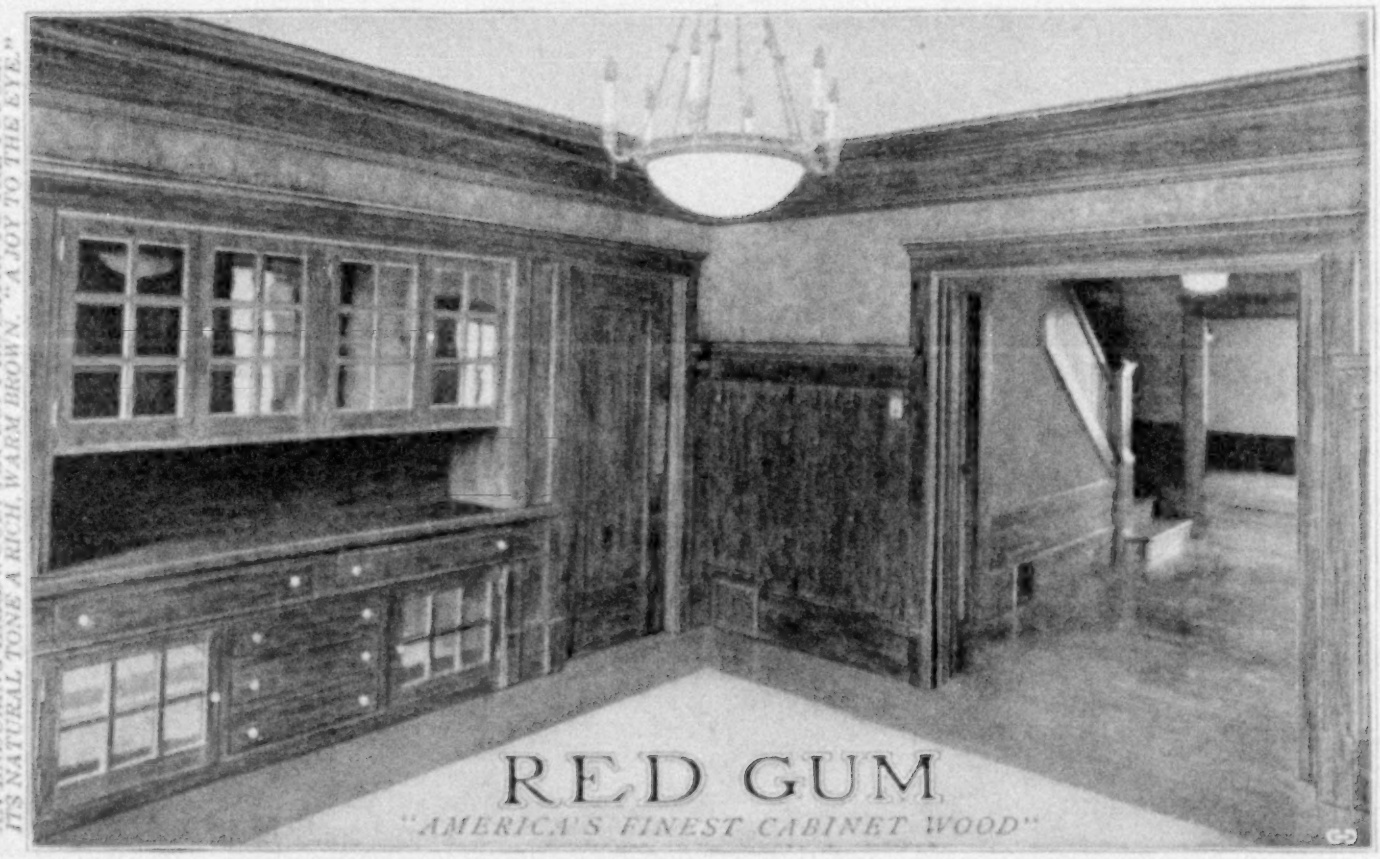

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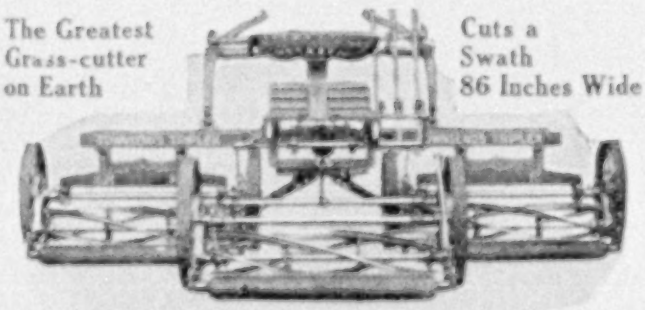

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VOL. XXXIII, No. 4 WASHINGTON APRIL, 1918

THE NATIONAL GEOGRAPHIC MAGAZINE

THE GEM OF THE OCEAN: OUR AMERICAN NAVY*

BY JOSEPHUS DANIELS, SECRETARY OF THE NAVY

IN POPULAR acceptance the navy is a fighting organization. Unless it is ready to fight and win victories, it fails of the main purpose of its existence. Its chief aim and object is national defense. In time of peace it studies and learns, and in time of war it practices the art of naval warfare.

In the naval service men are in training for a generation to fight, perhaps, for only a single day. But such a day! as when John Paul Jones said, "I have not yet begun to fight," as he boarded the enemy ship and sailed away with his prize; or when Lawrence won immortal fame by his admonition to his associates, "Don't give up the ship"; or when Perry, in his hour of triumph, sent the message, "We have met the enemy and they are ours"; or when Macdonough won the decisive victory on Lake Champlain; or when the *Monitor* and the *Merrimac* ushered in a revolution in naval construction and warfare as they clashed in mortal combat at Hampton Roads; or when Farragut steamed into Mobile Bay, heeding not the torpedoes; or when Dewey's guns at Manila conquered Spanish sea power and Dewey's diplomacy prevented German aggression; or when a few weeks ago the destroyer *Fanning,* assisted by the *Nicholson,* captured the whole crew and sank a German U-boat. Naval battles are always short, sharp, decisive.

It is because the tactics and the strategy call for quickness and the battle is won or lost in a few minutes that there is a glamour and a fascination and a glory in encounters at sea that appeal to the imagination more strongly than the larger and more sanguinary conflicts on land.

EVERY GENERATION HAS HAD ITS WAR

There has been, on an average, one war in every 29 years of our national life, and in most wars the naval engagements can be counted by minutes. Men, therefore, spend most of their careers getting ready for the supreme moment. It may never come, but woe to that officer who lacks initiative and coolness and courage in the one moment when all he has learned and practiced is worthless unless he can summon it to his command upon the instant of decision!

Great generals have won renown who were masters of the defensive, and there are times when Fabian methods on land spell victory. But at sea, the captain who depends upon defense is lost. Offensive methods, daring attack, ability to maneuver so as to obtain the advantage, and to shoot quickly and hit the enemy vessel—these are the essentials of high command afloat. They are attained only because the navy, in its shore establishments and afloat, is maintained and oper-

* Address by Hon. Josephus Daniels before the National Geographic Society, Washington, D. C., Friday, March 29, 1918.

Photograph from U. S. Navy Department

PHYSICAL TRAINING: SHELF DRILL AT A NAVAL STATION

"In the naval service men are in training for a generation to fight perhaps for only a single day." The training is mental and physical, for a battle is won or lost in a few minutes, and each man must fit perfectly into his place in the fighting machine (see page 313).

ated for the sole purpose of increasing the fighting efficiency of the fleet.

In times such as these, we naturally think only of the fighting side of the navy. But just as we need, in the construction of a battleship, to apply the work of more trades than are used in any other single structure built by man, so the navy, in its organization, utilizes a very large number of the arts and sciences, and produces as by-products, so to speak, of its main work many results which are of general interest and application in the maritime, engineering, industrial, or purely scientific fields. Thus the navy maintains a large number of building and repair yards in addition to a big gun factory which makes a majority of its guns.

In other words, the navy, as one of the largest employers of labor in the United States, has to deal not only with the problems incident to this, but with problems of civil and mechanical engineering, such as must be handled in the industrial world.

THE NAVY STUDIES INTERNATIONAL LAW

Even the Naval War College, founded primarily for the "study of problems of modern warfare in a manner at once scientific and practical," is one of the few institutions of the United States where the science and problems of international law are carefully studied. Officers of the navy are among our leading experts on international law, and, indeed, they need to be, for it falls to them more than to

Photograph from U. S. Navy Department

ON THE FORWARD DECK OF A DESTROYER

The word "periscope" from the lookout brings instant action, and every man leaps to his appointed place. Accuracy and eternal wakefulness are making the Atlantic sea lanes safer and safer from the submarine peril.

any other class in the country to apply the rules and principles of this science, which is rather neglected at present, when autocratic nations regard a solemn treaty as a mere scrap of paper.

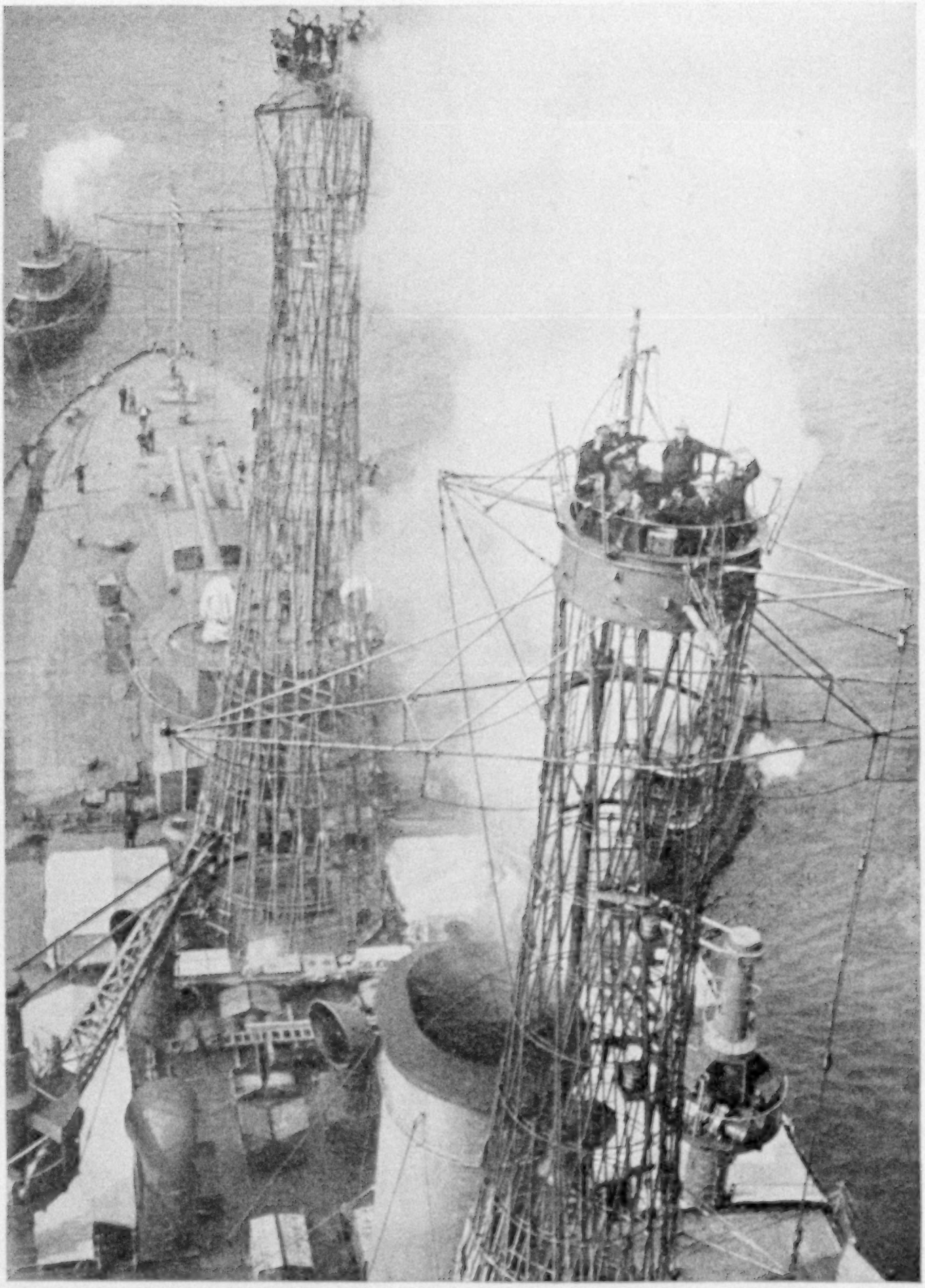
Navigation—a special branch of astronomical science—is needed for every ship that crosses the ocean, merchant as well as naval. For accurate navigation, there are required correct tables of the positions of the heavenly bodies at any time, instruments for observing the sun, moon, and stars, chronometers for determining correct time, and compasses for determining directions.

All work having to do with navigation is centered, for the navy, at the Naval Observatory in Washington, which compiles and publishes the *Nautical Almanac*, universally used; checks and corrects chronometers; studies compass problems and naval instruments generally. All of this work is freely given to the public and utilized by mariners generally.

The Hydrographic Office, another branch of the Navy Department, established more than fifty years ago by act of Congress, has for its purpose, in the words of the act, "the improvement of the means for navigating safely the vessels of the navy and mercantile marine by providing . . . accurate and cheap nautical charts, sailing directions, navigators, and manuals of instruction . . . for the benefit of navigators generally."

THE WORK OF THE MEDICAL CORPS

The principles of medical science apply to men in the navy as well as others, and the large and efficient Medical Corps of the navy has always contributed its share to the advancement of medical science generally. In times of stress, such as these, when the Medical Corps is much more than doubled, it draws in medical



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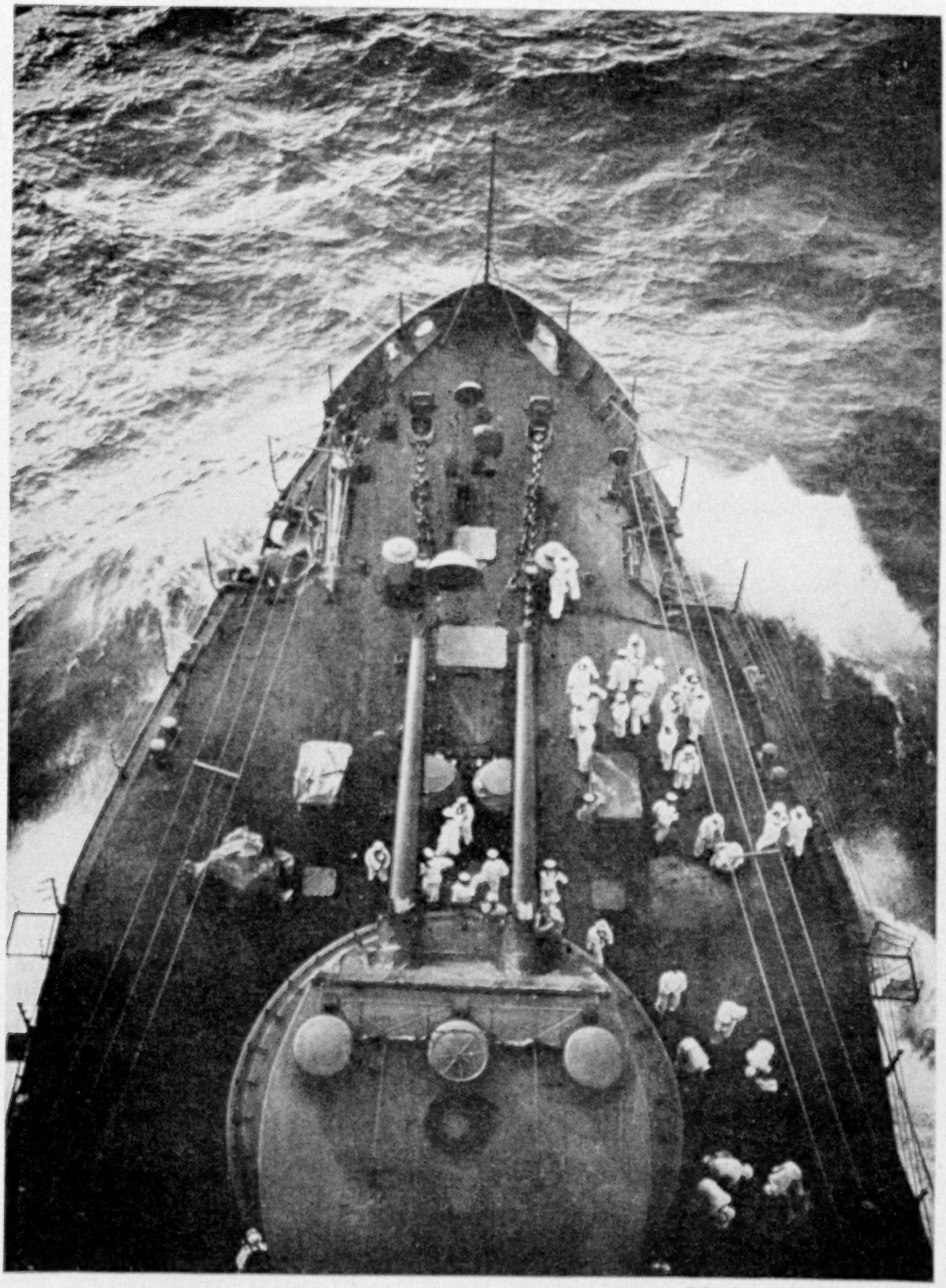
PUTTING THE FINISHING TOUCHES UPON A DREADNAUGHT

In the construction of a battleship there is applied the work of more trades than are represented in any other single structure built by man



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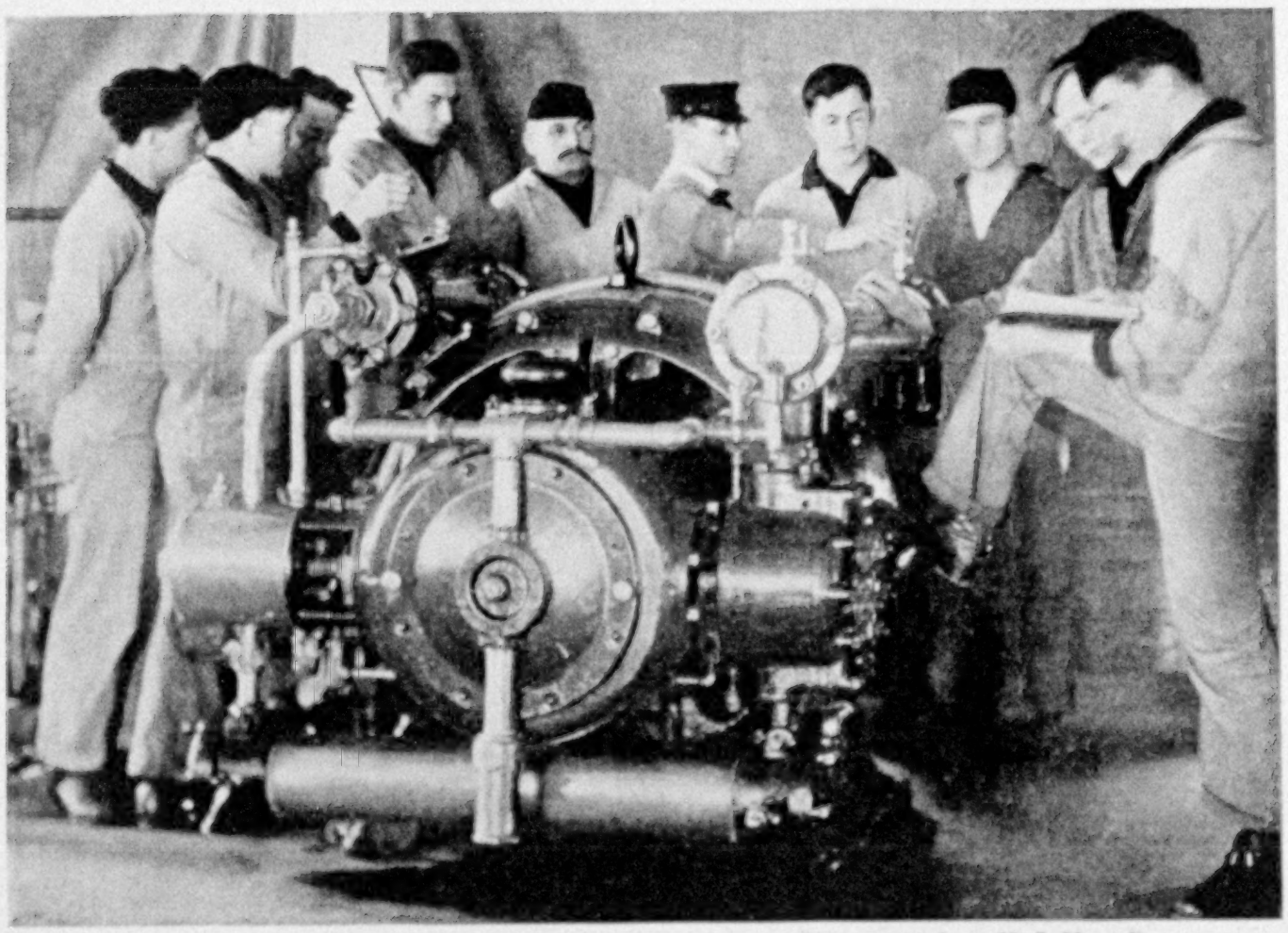
FORWARD DECK OF THE "MISSISSIPPI"

The men on a battleship spend years of intense practice getting ready for the single hour of a great sea fight. From early dawn until long after the shadows have deepened into darkness, every man among them is on the job. Now gun drill, now "abandon-ship" practice, now collision drill. Efficiency, more efficiency, and still more efficiency is the unceasing demand of the navy. And if you will watch how every man is at his post and doing his allotted task with the assurance, the precision, and the ease that come only from untiring practice, you will understand why those who know the American Navy from the inside have supreme confidence in its ability.



Photograph from U. S. Navy Department

A CLASS IN ENGINEERING AFLOAT

The navy as a training school in peace times is a great institution. It brings discipline to the untrained and world views to the untraveled. It drives home the lesson of good citizenship, creates respect for constituted authority, and fosters the improvement of head, hand, and heart. A little world within itself, often for weeks with only sea and sky around and above, the personnel of a modern battleship's crew develops an *esprit de corps* seldom equalled on land.

men from civil life, with the result that in time of war the relations between the naval doctor and the civilian doctor are even closer than in time of peace. Many of the special problems which the naval doctor has to deal with are found in civil life, and his knowledge and results are available for their solution.

For instance, not in the most crowded portions of our most congested cities will there be found so many souls living, breathing, and having their being in a given space as on a large naval vessel, with its crew of more than one thousand. Yet on battleships the health and comfort of the crews are at a maximum.

In the mechanical field, as already indicated, the navy handles many problems whose solutions are of value in civil life. At the Experimental Model Basin, for instance, at the Washington Navy Yard, though devoted primarily to improving the shapes and lines of naval vessels, a large number of tests have been made for private shipbuilding companies, who have made free use of this plant in the preparation of designs for merchant vessels.

There is a Navy Experiment Station at Annapolis, with a mechanical and engineering laboratory, and just before the war began Congress authorized a large research laboratory which, though primarily for navy use, will, of course, give much information on engineering subjects generally.

BY-PRODUCTS OF NAVAL ACTIVITIES

As this partial summary indicates, the navy as a by-product, so to speak, of its regular work makes progress in the arts and sciences which is of use (and made

use of) in civil life. Moreover, in ordinary times there has been a constant outflow of officers from the navy who engage in civilian pursuits, in many cases with distinguished success. For example, a very large proportion of the shipbuilding industry of this country is now under the direction of former officers of the navy.

There is, however, another side to this: The navy has always prided itself upon the fact that it made free use of the civil developments of the arts and sciences that are of value for its purposes. Something over two years ago the Department undertook to systematize and further develop this principle by organizing the Naval Consulting Board, in recognition of the fundamental importance of scientific work and scientific specialists to the navy organization as a whole. The Board is now made up of the most eminent scientists and inventors of this country, with Mr. Edison as its chairman, and two representatives of each of eleven leading American technical societies. These societies all chose men eminent in their respective professions, with the result that the Board as a whole is composed of men of great individual prestige, and in this war has devoted itself to the study of naval problems.

WHEN THE NAVY SPEAKS FOR ITSELF

The navy as a fighting agency, as the embodiment of power, as the protector of the country from aggression, is today the pride and the reliance of America. But that navy can speak for itself, is speaking for itself through its more than 350,000 men and more than 1,000 ships now in active service, and will speak with greater emphasis when the hour comes for which all other hours have been but preparation.

Never did a nation have more right to be proud of its navy than America has now, and never were fighting ships manned by men of such skill and valor as our fleet is today. Let us send to them across the ocean, in their vigils and in their perils, a message of cheer, a message of confidence, and a message of pride.

Once in 29 years the navy is called upon to fight. If in all the 26 years of peace, for a war usually lasts three years, its officers and men concerned themselves only with getting and keeping ready, the feeling of safety such a navy affords would be worth all that it costs.

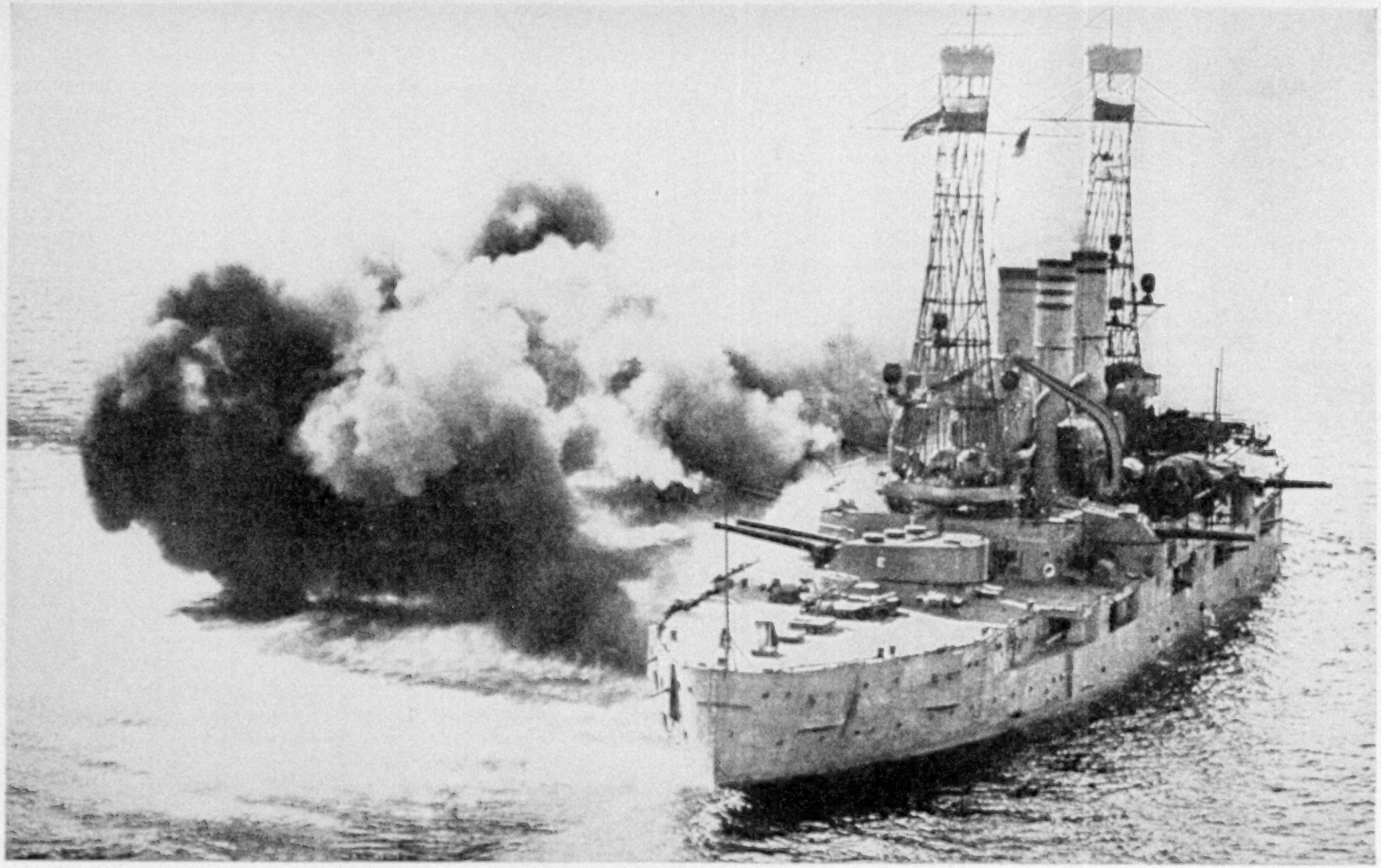
Today we have all come to agree with Gouverneur Morris, who, when referring to the navy and the expense therefor, said in the Senate: "When we have 20 ships of the line at sea we shall be respected by all Europe. The expense compared with the benefit is moderate—nay, trifling. Whatever sums are necessary to secure national independence must be paid. If we will not pay to be defended we must pay for being conquered." Those words never sounded so true as today. They have in them the ring of prophecy and warning.

In the intervals between wars the navy has not found its only occupation in practice and drill and maneuvers, in simulated warfare, making ready against the day when it would be helpless unless it is always ready.

THE NAVY AS AN INSTITUTION IN PEACE TIMES

In many ways it has demonstrated its necessity as a peace institution, and in its contribution to the spread of knowledge, to the extension of commerce by opening new doors to hitherto unknown peoples, to the discovery of new worlds, to the charting of the seas, to pioneer work in securing victories through diplomacy, to the study of the stars, to decreasing the time of ocean voyages and cheapening traffic by sea—in these and other ways the American Navy has been a leader, and all the world is debtor to it, because, aside from its place as a fighting machine, it has been a pathfinder in days of peace.

Palmerston was not thinking only, or even primarily, of naval warfare when he said of English officers what is equally true of American commanders afloat: "When I want a thing well done in a distant part of the world," said that typical John Bull statesman, who incarnated all the prejudices as well as all the virtues of his countrymen, "when I want a man with a good head and a good heart, lots of pluck, and plenty of common sense, I always send for a captain in the navy."



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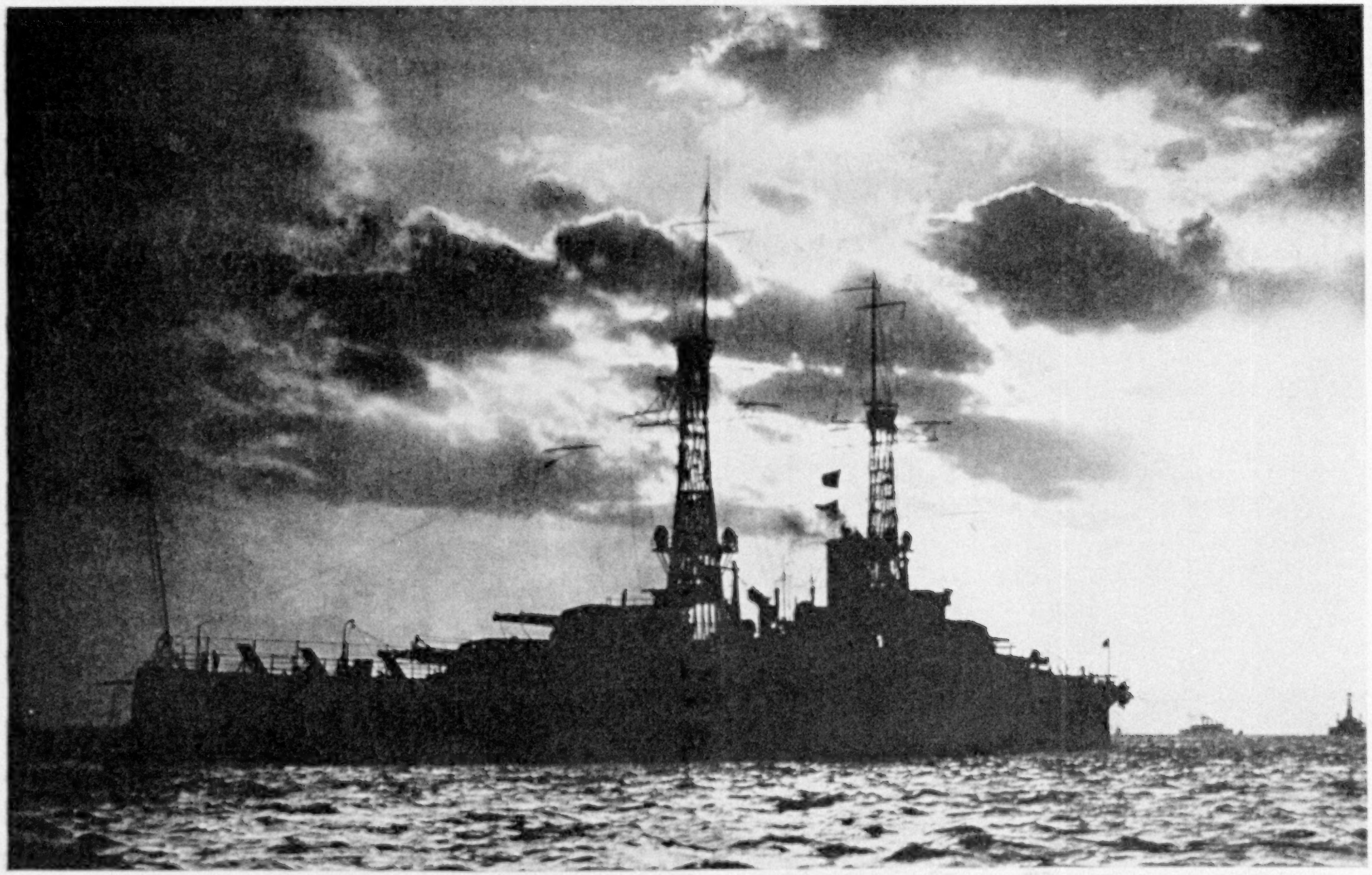
U. S. S. "NEW HAMPSHIRE" FIRING A BROADSIDE

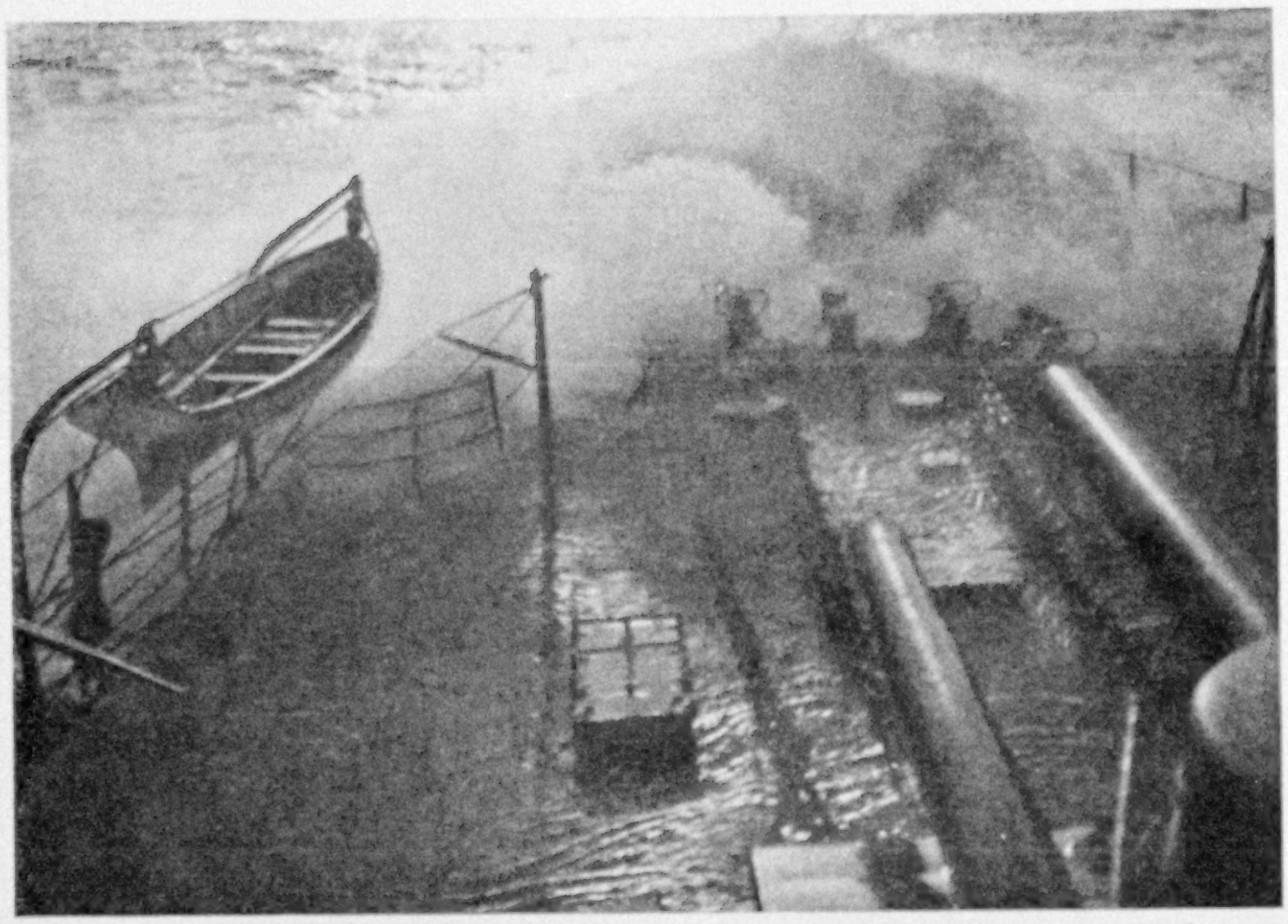
At every broadside of one of our newer dreadnaughts more than eight tons of metal, driven by more than two tons of smokeless powder, are discharged. Such velocity have the great shells that they would pierce five feet of wrought iron. The salary of the Admiral of the Navy for a year is only a little larger than the cost of one such broadside. One of our new ships has more fighting power than Dewey's whole fleet at Manila.



Photograph by Kadel & Herbert

BATTLESHIP "PENNSYLVANIA" AT SUNSET

Commodore Perry, "the Father of the Steam Navy," could hardly have imagined such a development as this enormous fighting ship represents. Peacefully rolling at anchor as the sun goes down, it becomes a silent watchdog of the night, but can burst into action with a flash and belch forth stupendous destruction upon an enemy threatening our shores.



Photograph from Ernest T. Fauroat

U. S. S. "GEORGIA" IN A TYPHOON: PACIFIC OCEAN, NEAR JAPAN

All naval vessels operating in the war zone are equipped with boat or life-raft capacity sufficient for every person on board. A stock of life-preservers of an improved type has been manufactured sufficient to supply one to each officer and man on board all vessels.

He might wisely have omitted the words "in a distant part of the world."

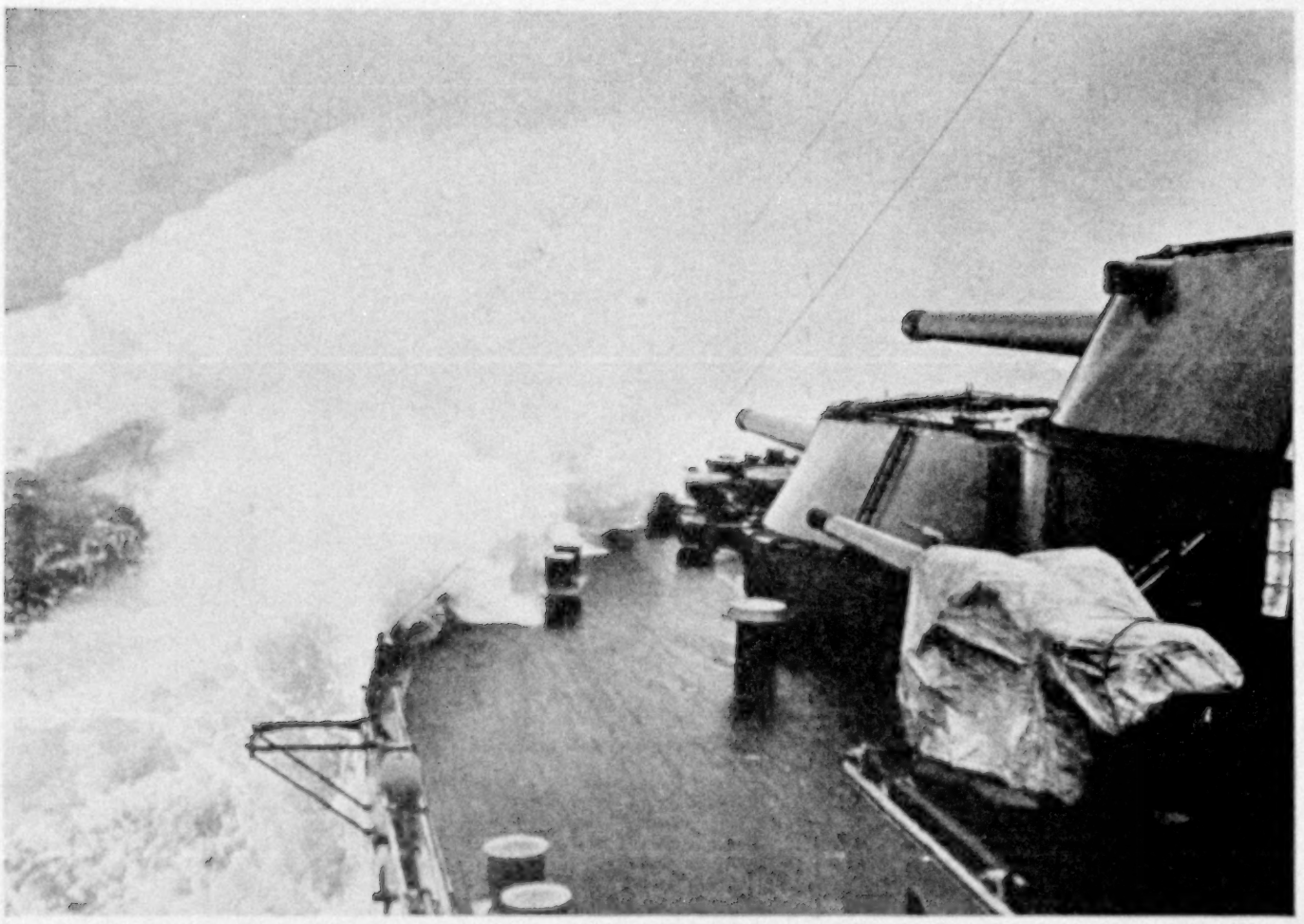
THE NAVY'S WORK IN SCIENCE AND EXPLORATION

The Navy in Peace—Its Work in Science and Exploration—let that be our thought at this session of the National Geographic Society, while the whole world reels in the throes of carnage on this day holy for all Christians. For though, through the smoke and gas and darkening of the heavens by death-dealing bombs, we may not see even its dawning, our faith looks beyond the roar of battle to the quiet days of peace that will once again smile upon a world made better—let us trust and believe—by the sacrifice which men who love liberty have been forced to make lest "might should rule alone."

I doubt not that we shall live to see the day when peace will once more beckon us and we can take up again and upon a larger scale the mighty works of discovery and exploration which in other peaceful days have been so large a part of the daily task of our American Navy.

But peace will not find us as we were before the war-lords plunged the world into blood. We shall never again be an isolated nation, living unto ourselves, concerned only with our own affairs, leaving to the comparatively few men of science and love of adventure and to the statesmen the keen interest in all things that concern the human race. Nor will we come back to ancient formulas, to old shibboleths, to the adoration of the Golden Calf we had set up, or even to the gods of Pleasure and Tradition and Gain we worshipped. We have learned in these testing days that these gods of ours had feet of clay.

With wide-open eyes, with larger vision and better appreciation of our re-



© Commander James B. Gilmer

PLUNGING INTO THE DEEP: U. S. S. "NEW YORK" IN A HURRICANE

Fighting forces on land are frequently deterred from offensive operations by storms, but at sea it often happens that the fouler the weather the greater the possibility of a brush with the enemy.

sponsibilities to our fellows, and with a spirit of glorious adventure and achievement, America will in the days to come sail every sea, chart every river, see its flag flying above its commerce-laden ships in the harbors of the uttermost parts of the earth, for "no pent-up Utica will contract our powers."

THE UNIVERSE WILL BE OURS FOR HELPING OUR FELLOW-MEN

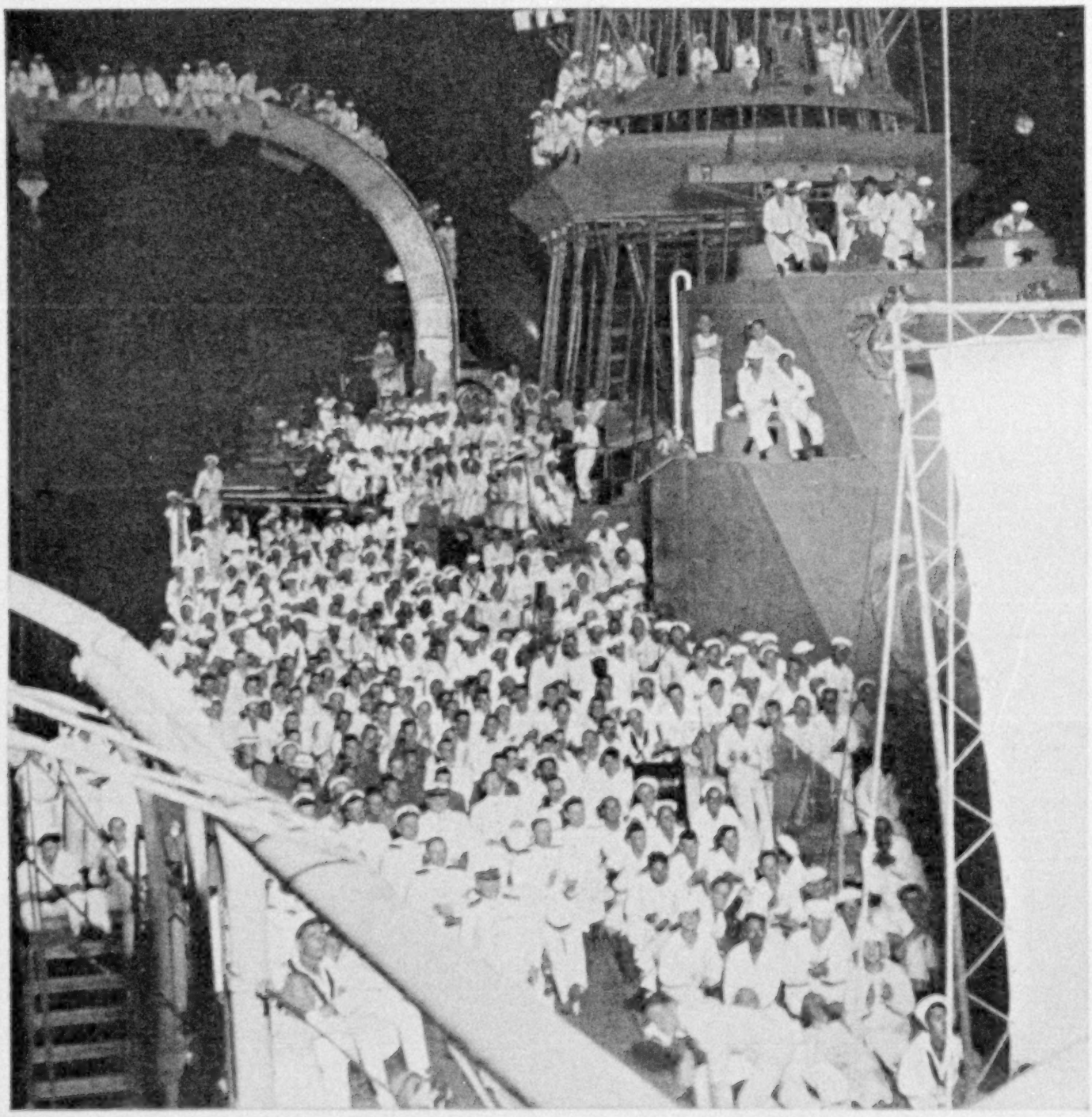
By service we shall claim "the boundless universe" as ours, not by conquest, but by opening new avenues for helping our fellow-men. Knowing that

> "There are firths beyond Pentland
> And friths beyond Forth,"

we shall explore them all and leave no resource undeveloped and no clime unknown.

And when, with a world-wide horizon, our America is once again happy, youthful with the zest of discovery, who will be our heroes? We will not find them in the staid statesmen of other days, who thought that the Alleghanies constituted the farthest outpost of possibilities, and that beyond the Mississippi was a country not worthy of exploration; who hugged the chimney corners of the Atlantic seaboard; scoffed at Jefferson for the vision that caused him to send Lewis and Clark to that new land "where flows the Oregon"; or saw nothing to make their pulses thrill in the voyages of discovery which were made by Wilkes and Perry, and Lynch and Lee, and Page and Ringgold, and Rodgers and Hall, and Herndon and Selfridge, and Todd and Hodges, and Schley and Sigsbee, and Peary, and scientific research along original lines by Maury and Pillsbury and other like explorers, and naval diplomats like Perry, who in this day would be well called "forward-looking men."

The new world, which, with a new heaven and a new earth, and new ideals,



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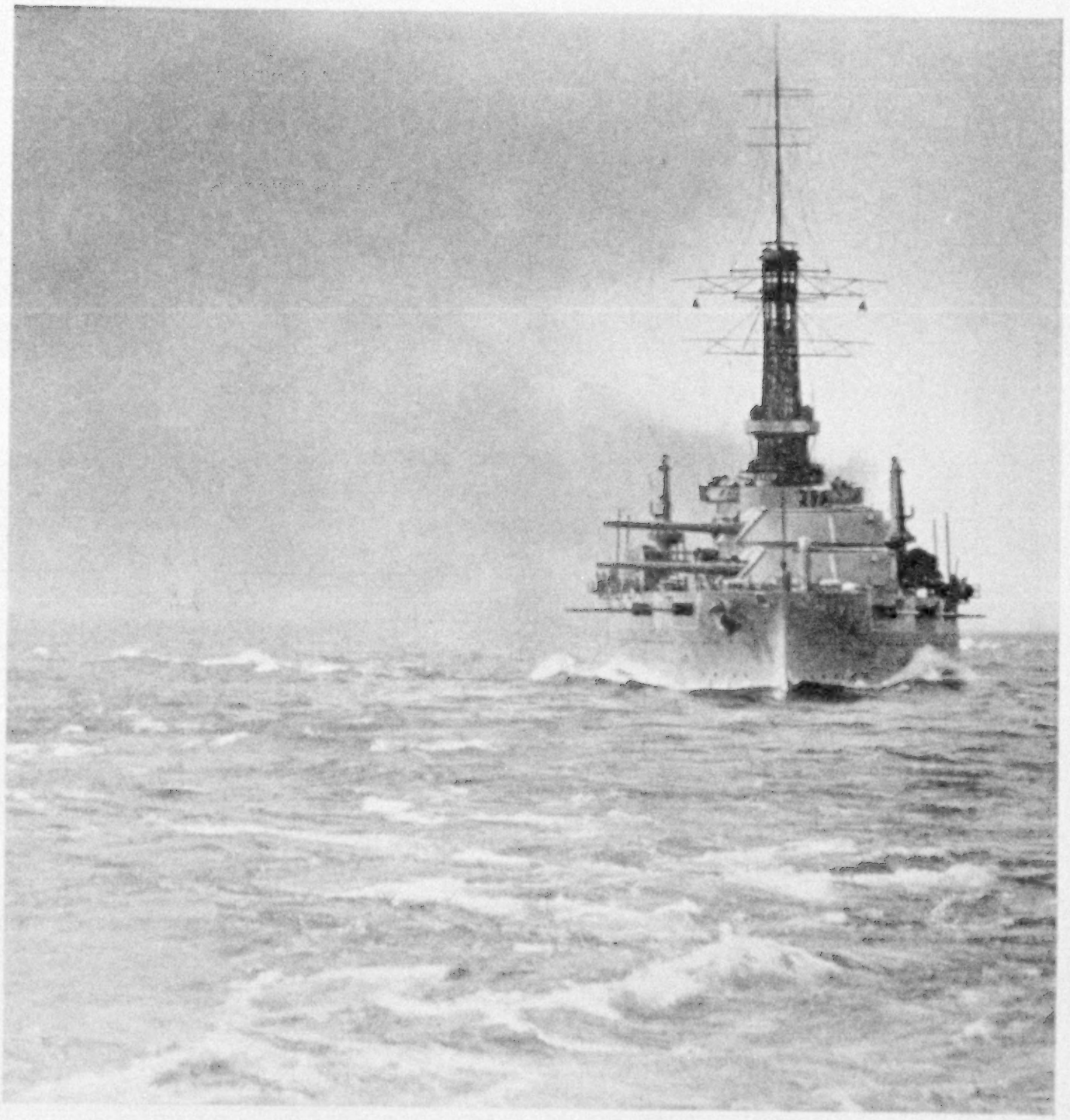
A "MOVIE" SHOW ON A BATTLESHIP

The motion-picture screen is a medium of education in the science of warfare as well as a means of entertaining the youths who man our warships

and new justice, and new equality, and new brotherhood of men—which will be born out of the war, I say—this new world will have no place in it for men who look backward. Reactionaries in politics and in geography will be relegated to museums, and the leaders of the new America will make Charles Wilkes and Matthew Calbraith Perry and Matthew Fontaine Maury their exemplars, as they go forth looking for new worlds to conquer, and to conquer as Wilkes and Perry and Maury made their conquests.

NAMES THAT WILL INSPIRE THE FUTURE NAVY

These names, which will stimulate emprise and daring, are on the roll of honor of the American Navy. There are other names of equal honor in their professions, but in explorations on the sea the navy, naturally and properly, blazed the way, and their careers and their deeds will be the inspiration of the younger men, who will leave no nook or cranny of the world unexplored, no body of water uncharted and no river unnavigated.



Photograph by Burnell Poole

U. S. S. "ARIZONA" AT SEA

The business end of this great American battleship, coming head on, is a formidable sight; broad of beam, bristling with guns, and manned by a thousand of the bravest of the brave, and every mother's son of them trained for his work.

These naval pioneers of the past—whether charting the waters of China and securing the treaty with Japan, like Perry; discovering the Antarctic Continent and contributing more to the world's knowledge of geography than any other man, like Wilkes; or making navigation a science, forecasting the weather, mastering the mysteries of the winds and currents, uncovering the knowledge of ocean meteorology, and making the phenomena of the Gulf Stream known to us, like Maury—these are the types of men who will be reincarnated in the adventurous youth of the golden days of discovery that challenge the intrepid and ambitious, and who, when this war is over, will be satisfied with no rest until all the secret places are flooded with the light, and all cheerless homes blessed with the comforts of our newer and better civilization.

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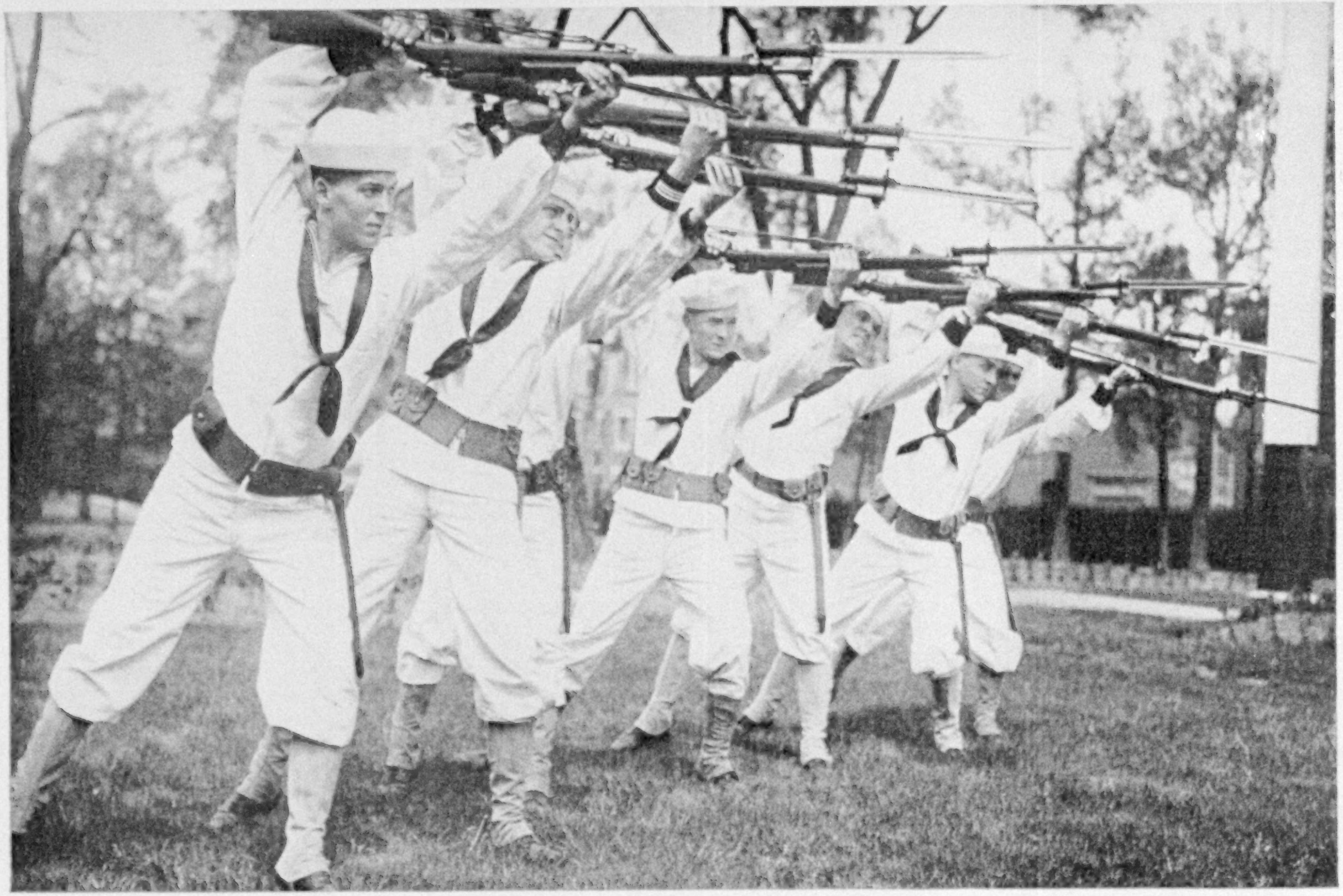

GETTING READY TO GO OVER THE TOP

The navy afloat never loses sight of the fact that it may have duties ashore; therefore the men are as well trained for participation in landing operations as in sea fighting

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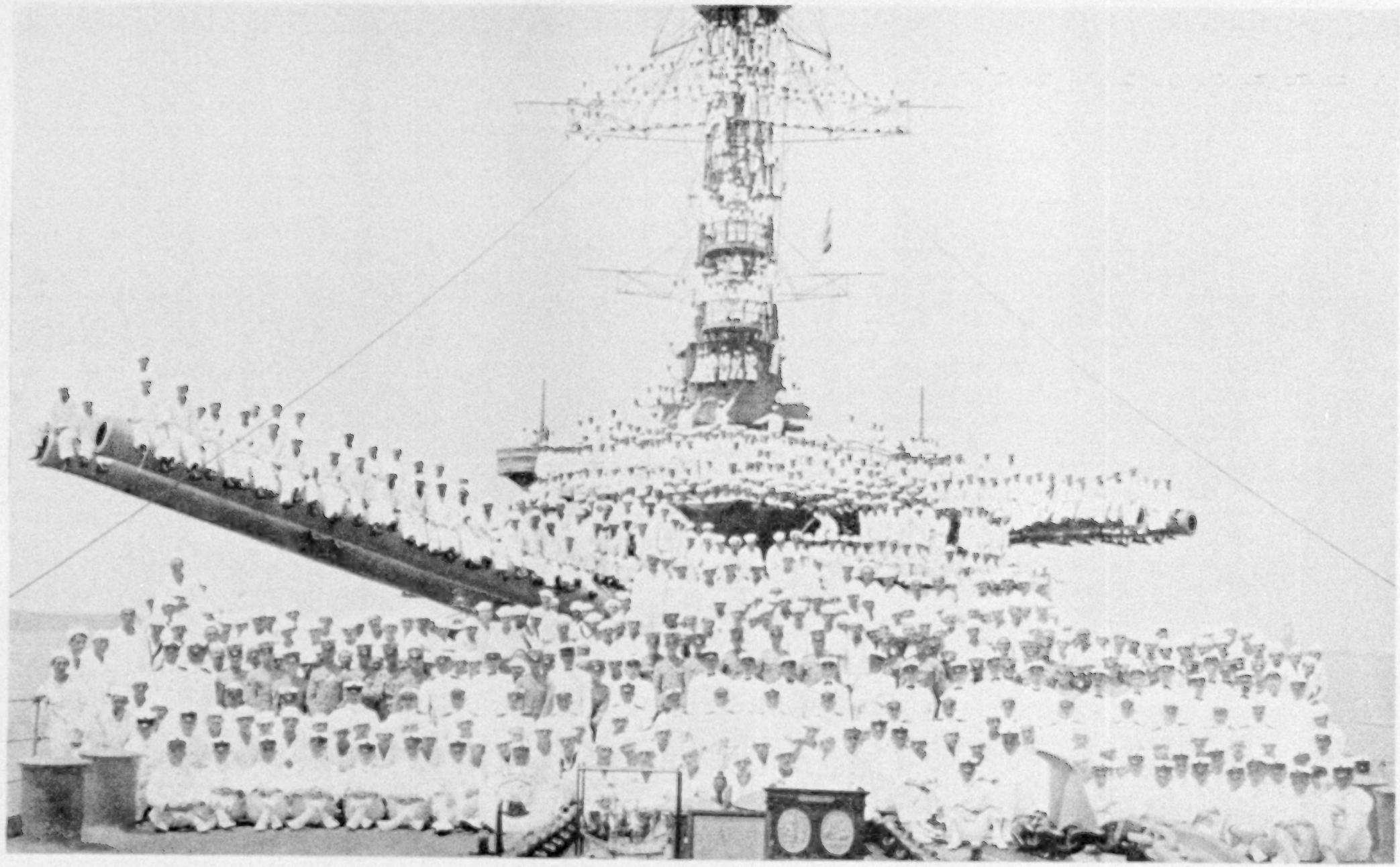

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THE OFFICIAL FAMILY OF THE U. S. S. "TEXAS"

For the first time in our history a United States fighting vessel has been named to commemorate the heroism of an enlisted man. Through the prompt action of Chief Gunner's Mate Osmun K. Ingram and the *Cassin's* officers and crew, that destroyer was brought safely to port after having been torpedoed by a German submarine. Engaged on patrol duty, the *Cassin* located the undersea boat and gave chase. The submarine fled, but discharged a torpedo at its pursuer. Seeing that the deadly missile would strike his vessel amidships, the *Cassin's* commander rang for extra speed. Ingram, realizing that the torpedo would strike in the vicinity of a quantity of high explosives on deck, which if set off would destroy the vessel, jumped to the spot, threw the dangerous freight overboard, but was killed at his self-appointed task. Secretary Daniels has recently named a new destroyer the *Ingram* as a tribute to this deed.

A NEW ORDER OF WARRIORS WILL FARE FORTH

When the war ends, and a stable peace, based upon government only by "the consent of the governed," has everywhere been established, the men who will sail the seas will neither go on voyages of conquest nor for the exploitation of peoples of other nations. They will be true knights, not going forth with that romantic chivalry which lacked practical knowledge and science.

These knights of our new day will be fired not with less noble purpose, but with more seasoned and practical ideals than those celebrated in song and story. These adventurous spirits will indeed ride abroad to redress wrongs, but they will not carry sword and spear or be hampered with mail and burdened with clanking armor.

They will be, first of all, men of the sea, who, noting the toll of human life exacted by ignorance of winds, and currents, and ocean paths, and harbors, will make safe the navigation of all the waters of the earth. Their weapons will be charts, and compasses, and buoys, and signals, and lighthouses, to the end that men who "go down to the sea in ships" may do so in safety from any hidden rock or treacherous shoal. They will study the life of Maury and his charts. They will consecrate their lives to his spirit of shortening ocean traffic and lessening dangers to navigation by the employment of every agency science and study and experience afloat may make available.

But safe navigation with these modern knights of sea communication will be only the ends to the larger means, for they will utilize these pathways of the seas for the interchange of products and ideas that will make the people of the whole world partners in all that man has made and all that man has learned.

National lines will indeed remain, and love of homeland still grip the hearts of men of varying climes and different tongues. The tower of Babel will not be torn down. We will not return to one Volapük. No knight-errantry will seek to compel men to speak the same language, and thereby lose to the world the folk-lore, the traditions, the literature that mark the growth and illustrate the life of every nation.

LINES OF NATIONAL SUSPICION TO BE OBLITERATED

But lines of national suspicion and distrust of other nations will be obliterated, as these new knights convince all to whom they carry their faith and their wares that no selfish ends tarnish their invisible armor, and that their mission is one of hastening the sway of universal brotherhood based upon universal justice.

These modern knights of enduring peace will be no mere dreamers. They will not expect all of a sudden that the selfishness of human nature will be eradicated by raising the wand and saying, "Be thou gone." They will recognize that justice alone will usher in the new era for which they have put on their armor, and their creed will be that the man who would have equity must do equity, and their religion will be that of the Man of Galilee, who said: "Whosoever will be chief among you, let him be your servant."

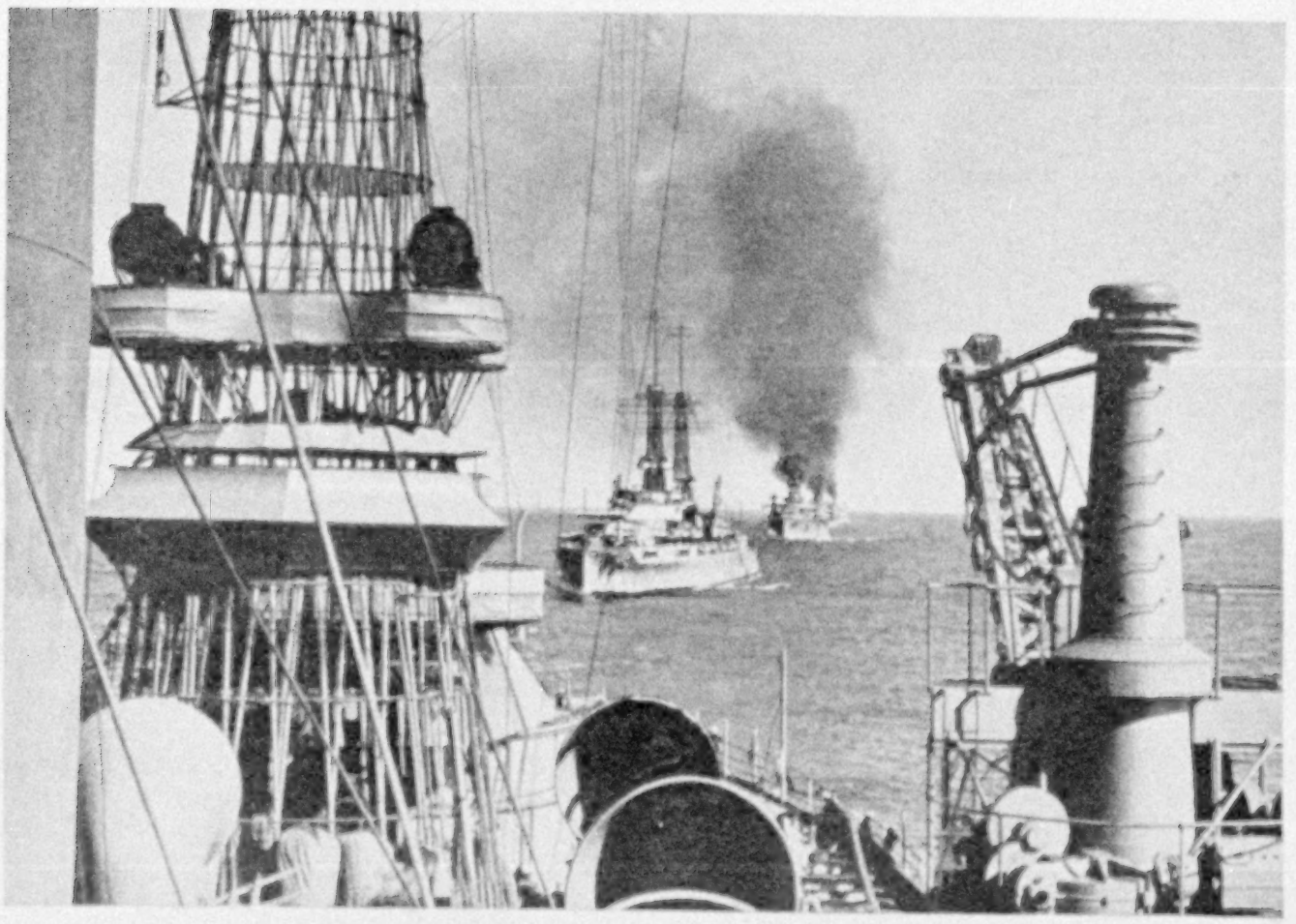
So that, as our modern Knight of the New Era of Peace carries his cargoes to the isles of the sea, he will open new doors of trade by a traffic that seeks no unfair advantage, giving from his country in fair exchange what is needed by the country with which he trades.

But he will recognize that, no matter how peaceful is his mission, or how honorable his purpose, or how unsullied his knighthood, the same spirit may not at first be found in those with whom he trades and visits. He will be warned by Mark Twain's story of the bad man, Slade, on the western frontier.

SLADES AMONG THE NATIONS

In a sudden quarrel with Slade, a big teamster drew his gun first and "had the drop" on the bad man. Slade laughed and said: "Ah, throw your gun away and let's fight it out with our fists." The angry giant then threw away his weapon and started for Slade to give him a good beating. Slade drew his gun and shot the big simpleton through the heart.

There are Slades among nations, and when a militant enemy says, "Let us have



Photograph from Burnell Poole

AMERICAN BATTLESHIPS IN COLUMN FORMATION

"The battle fleet, now twice as large as in peace times, has by no means been idle. Ships have been utilized as schools in gunnery and engineering to train the thousands of gunners and engineers required for the hundreds of vessels added to the navy and the many merchantmen furnished with arms and gun crews."

peace; we accept your doctrine—'no annexations, no indemnities'—throw away your guns," a people silly enough to practice the folly finds that Slade has kept his gun and demands not only indemnities, but territory and complete subservience.

We may not expect all nations to accept the just tenders of world-wide brotherhood in the spirit in which they will be tendered by the twentieth century after-the-war chivalry. Therefore, all the peace-loving nations must enter into an international agreement neither to throw away their guns nor to tie up their war ships, but to make them one common international peace police on land and sea, tendering to all nations, great and small, the High Court of Arbitration for the settlement of all differences, ready to enforce the decrees of that tribunal and make this police force so strong that no war-lord will ever again dare resort to the sword to impose his will or his country's greed upon other nations.

KNIGHTS OF GEOGRAPHY

These practical Knights of Peace and Justice will master the secrets of earth and sea and sky for the comfort and improvement of the race. They will let no water power remain unharnessed. They will draw nitrates from the air to enrich the earth. They will utilize present agencies of production, so that plenty will bless mankind and unlock the secrets of nature to increase production faster than population makes demand for food and raiment and comforts—aye, and luxuries, also; for the best is none too good for all who labor.

Discoveries now undreamed of will respond to the master touch of men and genius, and we shall transport, without loss, from one continent to another the products and wares that will add to human happiness. These new knights of

Photograph from Burnell Poole

NAVY AVIATORS WITH HYDRO-AIRPLANE

While not so swift as the smaller, lighter aircraft, designed for service over land, seaplanes have proved of invaluable aid to the allied navies as scouts, and especially in the detection of submerged U-boats.

science and industry the new day will usher in, will prevent any fruits or vegetables going to waste in the tropics that would please the palate of any man in the furthermost North. Waste will be eliminated from Pole to Pole.

Governments, instead of being required to spend billions on arms, will raise large sums for the creation of instrumentalities of education and research and scientific production until no man who labors will lack anything that will give nourishment or add to his happiness. Selfish individualism will be replaced by enlightened coöperation.

DAYS WHEN PROFITEERS WILL BE DEAD

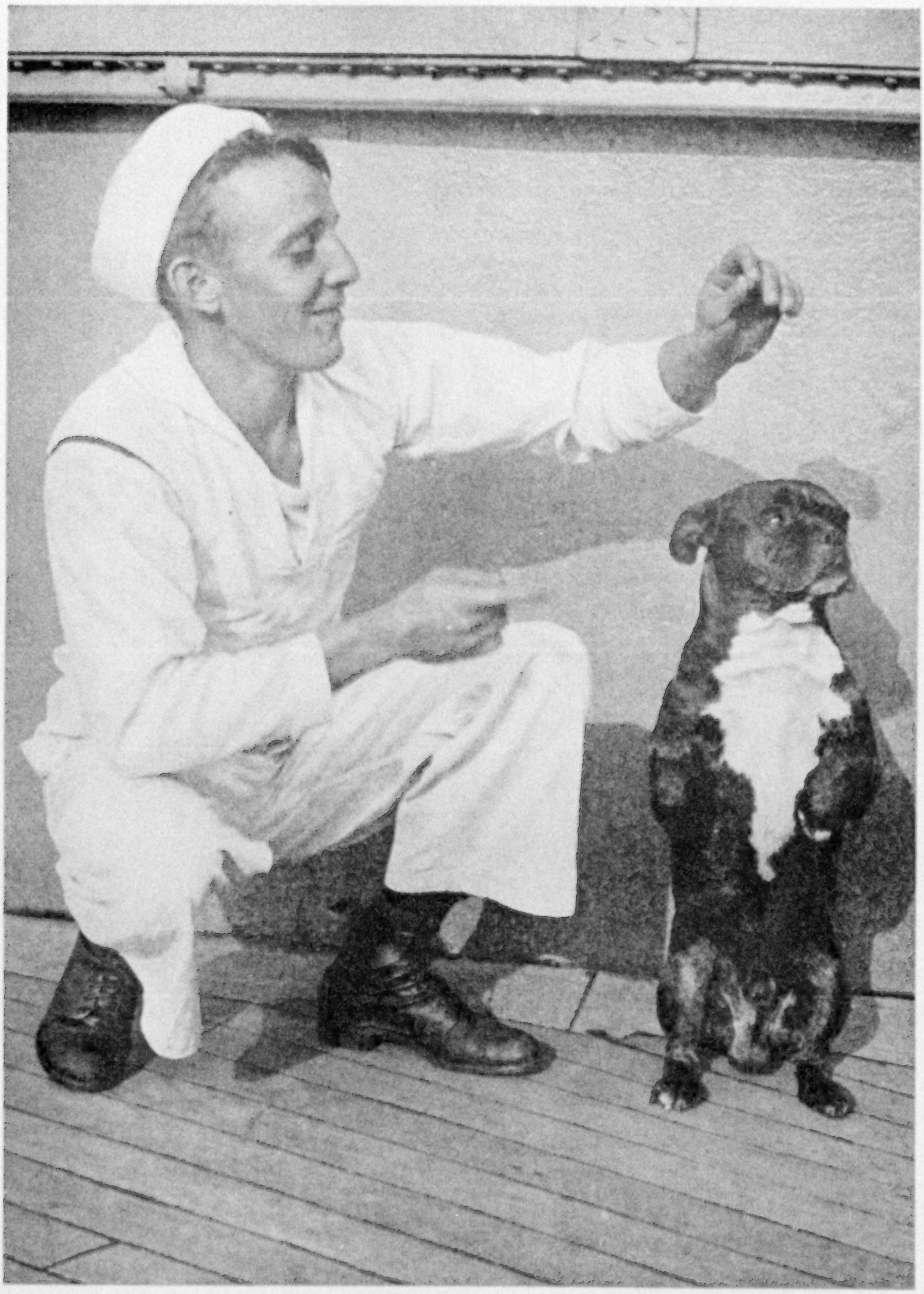
And whatever any nation produces that is good will be made available without profiteering to men and women in every other nation.

Chemists and workers in ordnance and in making munitions will be freed from making agencies of destruction, so they may carry on experiments and operations to multiply all things that will sustain and make life more abundant, instead of increasing the butchery of the race.

Education of all, medical treatment without cost, and free hospitals for the aged and infirm—the real tests of civilization—will be universal. Teachers and physicians and preachers will be honored above captains of wealth and exploiters and politicians.

These will be some of the fruits of the peace that will bless the world when "the Parliament of Man and the Federation of the World" comes to us. And it will come—let no man doubt that. We shall find this "place in the sun" not for our country alone, but its warmth shall surely bless all mankind. Men and women in this gathering will see the prophecy fulfilled in their day, when

> "No one shall work for money and no one shall work for fame,
> But each for the joy of the working."



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"BUSTER," THE BOSTON BULL, MASCOT OF THE NEW "TEXAS"

A ship's crew without its mascots is like meat without salt. Dogs, goats, bear cubs, monkeys, young lions, anything. And if there are any possible tricks the tars neglect to teach these community pets, naval annals omit to record them.

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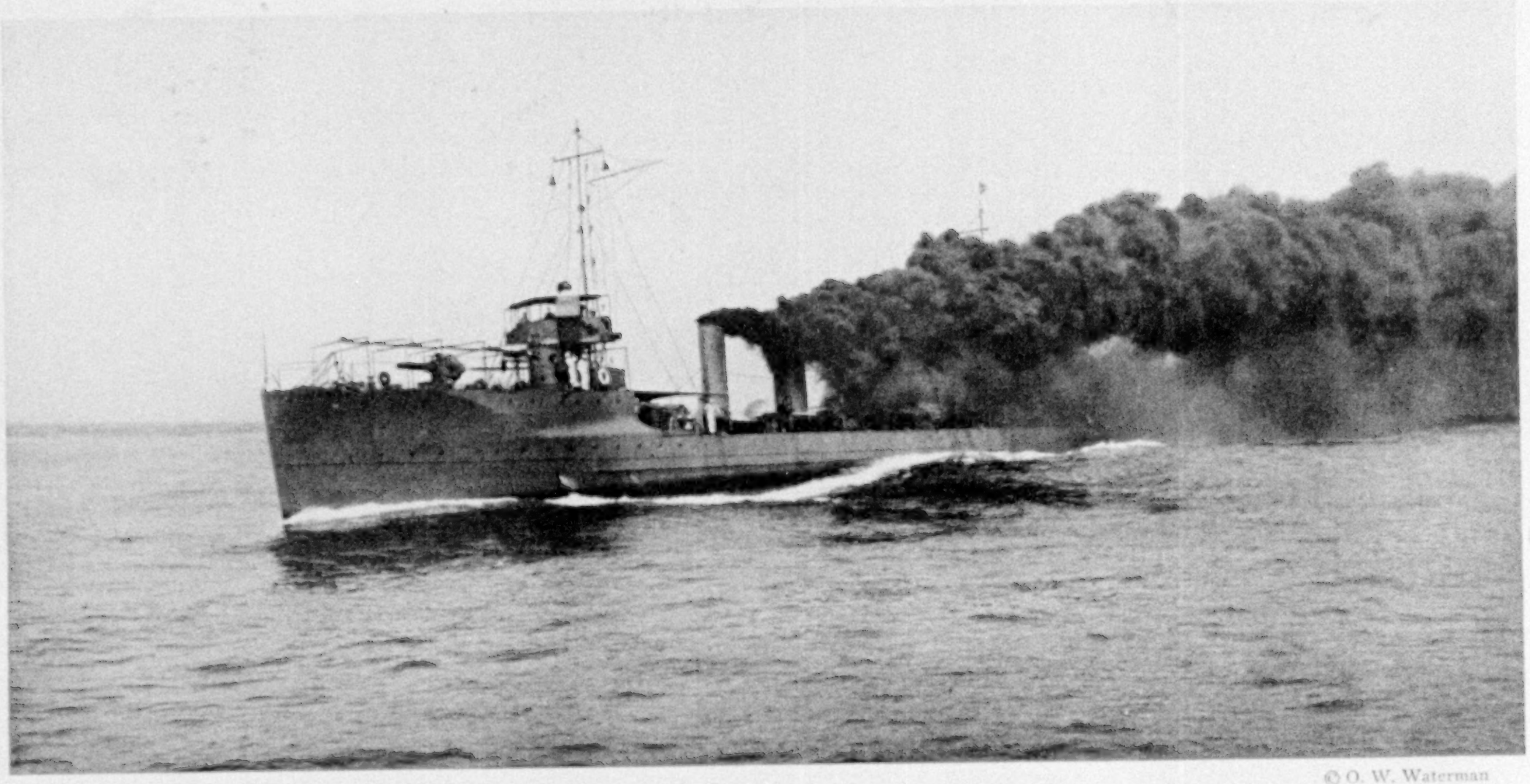

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CAMOUFLAGE OF THE SEA: A DESTROYER THROWING OUT A SMOKE SCREEN

Concealed behind the thick smoke of their convoying warships, merchant vessels are crossing and recrossing in safety the zone wherein the Hun submarine lurks on the lookout for its prey

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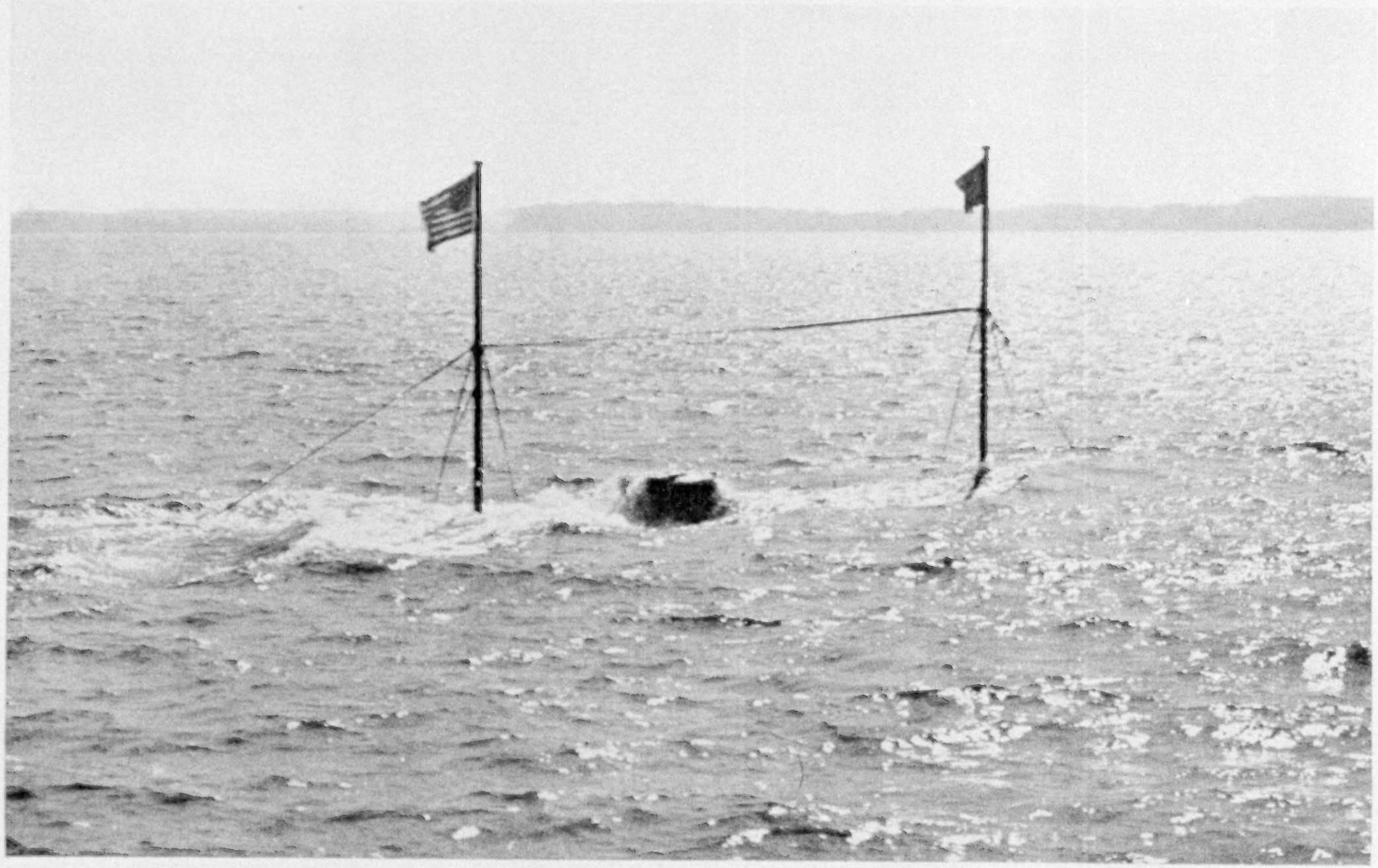


Photograph from M. Rosenfeld

AN AMERICAN SUBMARINE SUBMERGING

In conjunction with the undersea flotillas of Great Britain, America's submarines are waging ceaseless warfare on the German U-boats. On several occasions it has been demonstrated that sometimes "it takes a submarine to catch a submarine."

Photograph by Edwin Levick

THE NAVY IN PEACE

What could be more illustrative of the quiet majesty of peace-loving America than this picture of a land-locked harbor with the nation's outposts of the sea lying peacefully at anchor? But the war is on and the supreme hour cannot be far away. Soon it will come, and America need not shrink from its test.

and for the benediction which unselfish labor for others will give to this old world, which will be born again.

But how will this miracle be accomplished? Men living in the new day we visualize will not reach this high plane by some new revelation or by being transformed into angels. They will find their inspiration and their stimulus in what their fellow-mortals before them have done. The miracle will be performed when the whole people study the lives of the three most eminent naval explorers—Wilkes, Perry, and Maury—and translate the actions of this triumvirate of heroes into world-wide practice.

UNIVERSAL HISTORY THE HISTORY OF THE WORLD'S GREAT MEN

"Universal history," says Carlyle, "the history of what man has accomplished in this world, is at bottom the history of the great men who have worked here. They were the leaders of men, these great ones; the modelers, patterns, and in a wide sense creators, of whatsoever the general mass of men continued to do or attain; all things that we see standing accomplished in the world are properly the outer material result, the practical realization and embodiment, of thoughts that dwelt in the great men sent into the world; the soul of the whole world's history, it may justly be considered, were the history of these."

With full understanding of the truth expressed by the Sage of Craigenputtock, I invite a contemplation of the lessons in the lives of Wilkes and Perry and Maury as the beacons that will guide us into the larger and nobler world I dare believe we are to live in and make us worthy of these heroic souls.

"We cannot look, however imperfectly, upon a great man," declares Carlyle, "without gaining something by him. He is the living light-fountain, which it is good and pleasant to be near. The light which enlightens, which has enlightened the darkness of the world; and this not as a kindled lamp only, but rather as a natural luminary shining by the gift of Heaven—a flowing light-fountain, as I say, of native original insight, of manhood and heroic nobleness, in whose radiance all souls feel it is well with them."

GREAT MEN WILL CALL US TO "CARRY ON"

The heroic naval figures, which beckon us as students of geography and lovers of our fellows, were men whose scientific and diplomatic achievements were equaled only by their spirit of adventure, their love of the open sea, their quest for the unknown, and their intrepid daring in seeking new continents and new experiences and new discoveries.

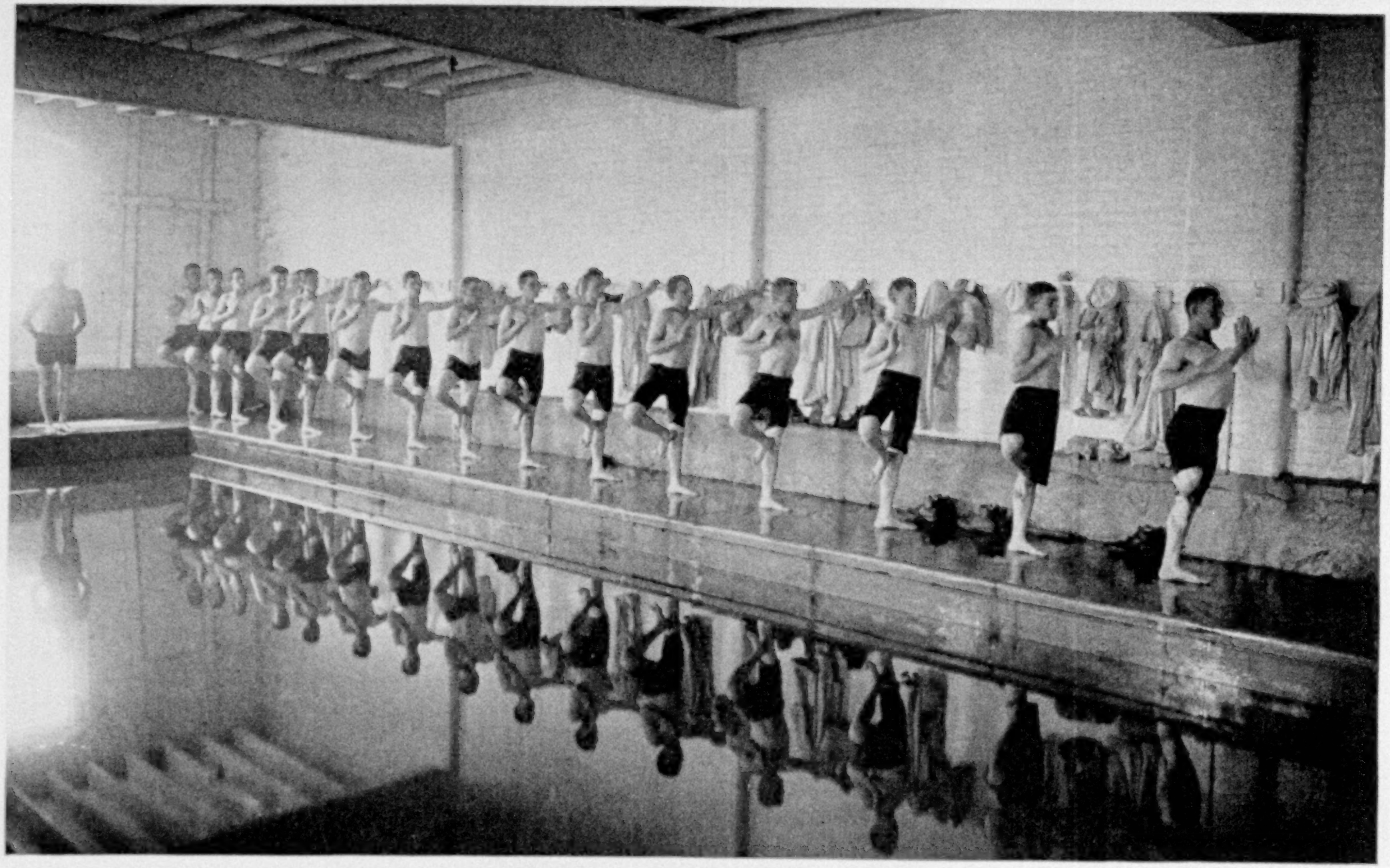
Youth is ever attracted by the careers of those who blazed new paths. No young man is a "standpatter" or a recluse or a stay-at-home. The quest of new worlds is his ideal of a life worth while. It is because of this that the story of Charles Wilkes has all the fascination of romance.

"It affords me much gratification to report that we have discovered a large body of land within the Antarctic Circle, which I have named the Antarctic Continent," was the terse, sailor-like statement with which Wilkes announced the result of an expedition which had cruised completely around the world, discovered a new continent, now called Wilkes Land; determined the position of the South Magnetic Pole, and had charted 500 islands and atolls, together with 100 harbors, accompanying them with sailing directions and observations of tides and currents, and charts which are still used by navigators—the results of a voyage of six years, from 1838 to 1844.

It has been said that no other single American expedition ever contributed so much to the world's knowledge of foreign geography. Wilkes received the gold medal of the Royal Geographical Society and is one of the patron saints of the National Geographic Society.

FEW ACCIDENTS IN THE WORLD OF DISCOVERY

There are few accidents in the world of adventure and discovery. Wilkes was selected to command the exploring expedition by reason of his energy and his scientific attainments. He had served as head of the Chart Depot, in the Navy Department, where he set up the first fixed



Photograph from U. S. Navy Department

A SWIMMING CLASS AT A NAVAL TRAINING STATION

Many a merchant sailor cannot swim, but it is because he has never been in the navy. Here this instruction is a part of the curriculum, and in this generation a bluejacket who cannot swim is a rarity.

Photograph by Edwin Levick

LIBERTY AND HER DEFENDERS

"Never did a nation have more right to be proud of its navy than now, and never were fighting ships manned by men of such skill and valor as our fleet is today" (see page 317)

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A PRECIOUS MOMENT SAVED: LAUNDRY WORK DONE WITHOUT WAITING

Shore leave is universally desired whenever a ship arrives in port, and the launches ply back and forth, from the great gray bulldogs of the sea to the landing places, pulling barges behind them loaded to the gunwales with bluejackets on furlough.

astronomical instruments in the United States.

In addition to his volumes telling of his discovery of the land which now bears his name, he wrote several works, among them "Western America, Including California and Oregon" and a work on "Theory of the Winds." In the war between the States, he commanded the *San Jacinto* when Mason and Slidell, Confederate Commissioners to England, were taken from the English mail steamer *Trent*, for which he received the commendation of his government; and he was later in command of the James River Flotilla and the West India Squadron.

I call him "a living light-fountain," not only because of his discoveries, but because, imbued with the real American spirit, he rendered his service for all mankind and never even suggested that the lands discovered should be appropriated by his government or that the value of his explorations should be monopolized by the United States. The expedition was undertaken for scientific and industrial reasons. Its results became the property of the whole world. He neither sought for himself nor for his country, which paid the cost of the expedition, anything that was not open to the fisherman and voyager of other nations. It is because of this spirit that I commend Charles Wilkes as a naval hero, the study of whose life will help in the realization of the golden age which lies before us.

COMMODORE PERRY A BRILLIANT DIPLOMAT

The early services of Matthew Calbraith Perry foreshadowed his illustrious career. He was entrusted with the delicate mission to Japan because he had shown constructive statesmanship as a naval officer. He was privileged to choose the location for the first free black settlement in Liberia. He is called "The

© Burnell Poole

GETTING READY FOR A NEW DRESS

After a ship has been dry-docked and the bottom freed of barnacles it is washed down thoroughly with fire-hose. Then the painters take charge, and in a little while she comes out as spick and span, with her war paint on, as though she had just come from the ways.

Father of the Steam Navy." He revived the use of the ram in naval warfare. He founded the naval apprentice system. He was active in suppressing the slave trade on the Guinea Coast. He adjusted the Canadian fisheries dispute in 1852.

He helped greatly in removing duelling, grogging, and flogging from the navy. In 1847 he commanded the largest squadron which up to that time had ever been assembled under the Stars and Stripes. It was the first American fleet governed without the lash, flogging having been abolished by Secretary Graham. It was that fleet which decided the day at Vera Cruz and started General Scott on his victorious way to the City of Mexico.

The triumph of Perry upon which his fame chiefly rests was the opening of Japan to the world, one of the most important events in our history. The story of Perry's voyage to Japan has all the glamour of the stories of the Orient, and is fascinating beyond the imagination of the most fertile novelist. Armed with a letter from the President of the United States to his Imperial Majesty the Emperor of Japan, saluted as a "Great and Good Friend," Commodore Perry made a thorough study of Japan and the Japanese character before starting on his epoch-making voyage.

TAKING WESTERN INVENTIONS TO JAPAN

He carried as presents specimens of the products of the farm and factory, which he thought by their novelty and usefulness would interest the people of Japan. A miniature locomotive, with tracks and rails to be laid down, one mile of telegraph line with Morse instruments, photo-cameras, printing-presses, puzzles and toys, some of the newest things in America, were in the cargo.

The story of his wisdom, his patience, his consummate diplomacy, going into weeks and months and years, the employment of every art that statesmanship

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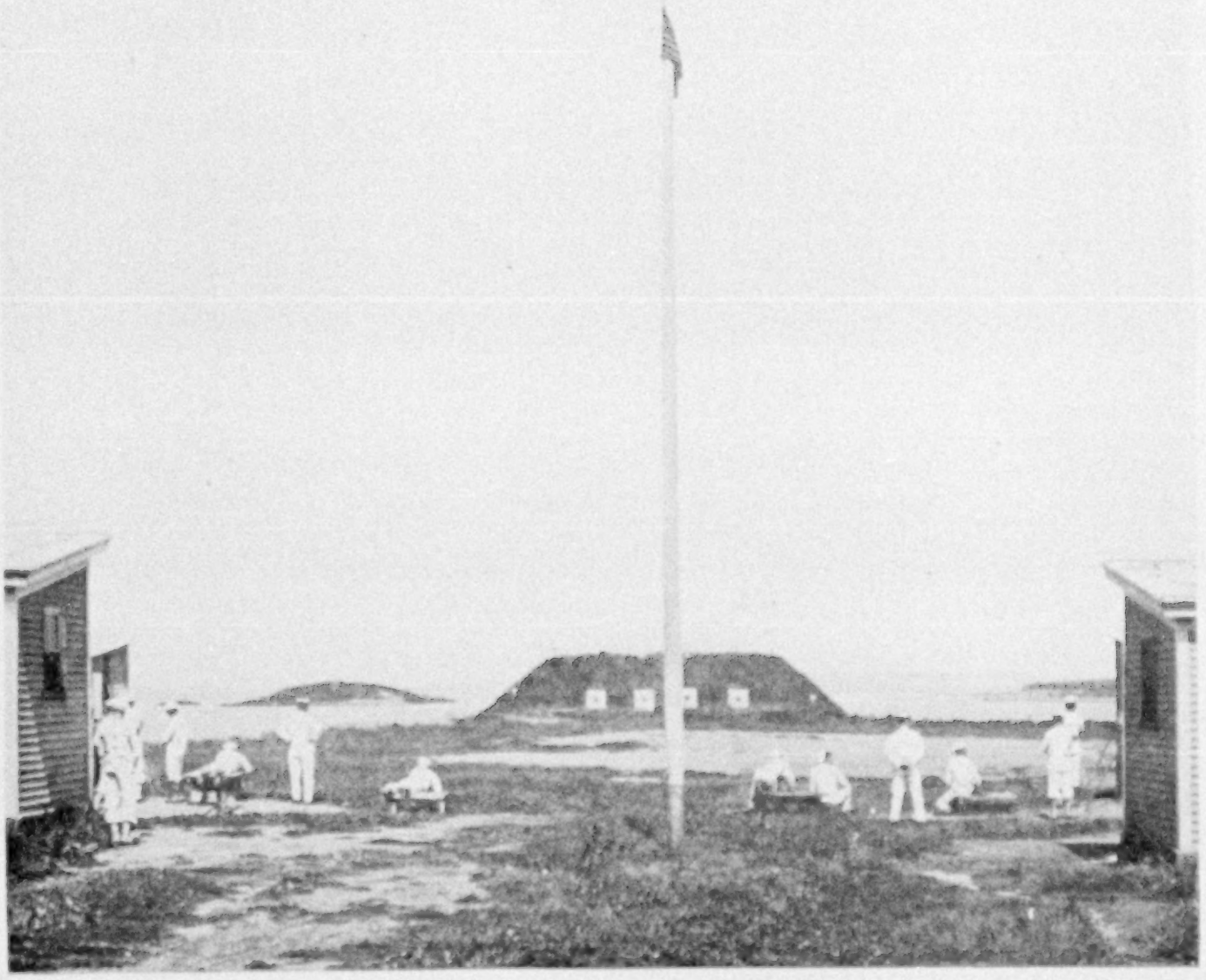
AN AMERICAN BATTLESHIP USING A SMOKE SCREEN IN THE WAR ZONE

In previous wars a battleship's smoke has always been considered a necessary evil, betraying the vessel's approach to the enemy; nowadays the tell-tale smoke is employed as a veil to conceal secret maneuvers

Photograph from U. S. Navy Department

A CREW IN A SHIP'S READING-ROOM

There is no sight in the American Navy that is more gratifying than to go through the quarters of the men and watch them studying. For many years they had been taking correspondence courses with remarkable success, but when Secretary Daniels came into office he broadened this work and has made it possible for an enlisted man to win an appointment to the Naval Academy, thus once more opening the honored road that leads from the forecastle to the quarterdeck.



Photograph by U. S. Navy Department

ON THE TARGET RANGE, NAVAL TRAINING STATION, NEWPORT, RHODE ISLAND

"Put your trust in God, my boys, and keep your powder dry," was Cromwell's famous admonition. The American officer adds, "and learn to aim straight;" for, with the modern high-power rifle, having an effective range of two and four-fifths miles, the sharpshooter is a foe of enormous potentiality.

and strategy could invent, is as thrilling today as when it was first told. He had gone to Japan with a friendly key to open the door for the furtherance of trade, the protection of life, and to obtain a treaty with a power destined to occupy a large place in the world. Hurrying nothing, observing every ceremony that would appeal to those he would win as friends, Perry's success marked him as a diplomat of the first water.

When the negotiations had reached a stage where the high contracting parties had about agreed, Hayashi wished to insert a clause that no American woman should be brought to Japan. Tradition has it that when this proposition was submitted the Commodore excitedly exclaimed, "Great Heavens! If I were to permit any such stipulation as that in the treaty, when I got home the women would pull all the hair out of my head." And that was half a century and more before those wonderful evangelists, Anna Howard Shaw and Carrie Chapman Catt, taught us to believe in woman suffrage as a new creed in geographical and political expansion!

Overlooking the harbor of Nippon stands a monument to Commodore Perry, commemorating the sailor-diplomat whose wisdom made Japan and America know and esteem each other. The friendship between these two nations has been

Photograph from Burnell Poole

CLEANING SHIP IN DRY-DOCK

"Skyhooting through the brine" develops a "foul bottom" after a while, and the ship must be floated into a dry-dock and scraped free of its barnacles. These creatures of the ocean attach themselves to the ships' sides, and even the roar of the big guns in a broadside or the lashing waters of "twenty knots and better" cannot break their hold.

cemented in the present-day partnership in the war for the triumph of free nations, in which they are allies. The spirit of Perry and Hayashi still pervades both countries, which, in the language of the letter borne by Perry, "live in friendship and commercial intercourse with each other."

Does not the achievement of Perry class him with the great men "as a natural luminary shining by the gift of heaven, in whose radiance all souls feel it is well with them?"

A PEACE BORN OF KINDNESS

It is to the glory of America that, though Perry had a powerful fleet and could have enforced the treaty by the persuasion of big guns, there was never even a thought of conquest or of obtaining any advantage over the people of Japan. Our friendship was disinterested, our methods were those of diplomacy, and our policy was far removed from the thoughts of those nations which seek to dominate other people and bring them under their sway.

Do we not see in this diplomatic victory and this friendship a prophecy of like intercourse of all nations with each other when the passions of autocracy, now burning at white heat, have given place to calm reason and justice? Will not the spirit of Perry, who incarnated American ideals, descend upon the great men who come after him, so that none will seek power by the overthrow of any other nation? Let us in this day invoke the spirit of Perry, the fighting sailor, who lives as the master diplomat rather than the man of war.

The third of this trinity of naval heroes, whose deeds summon us to insure a world safe for commerce and safe for all that makes for the good of humanity, is Matthew Fontaine Maury—sailor,

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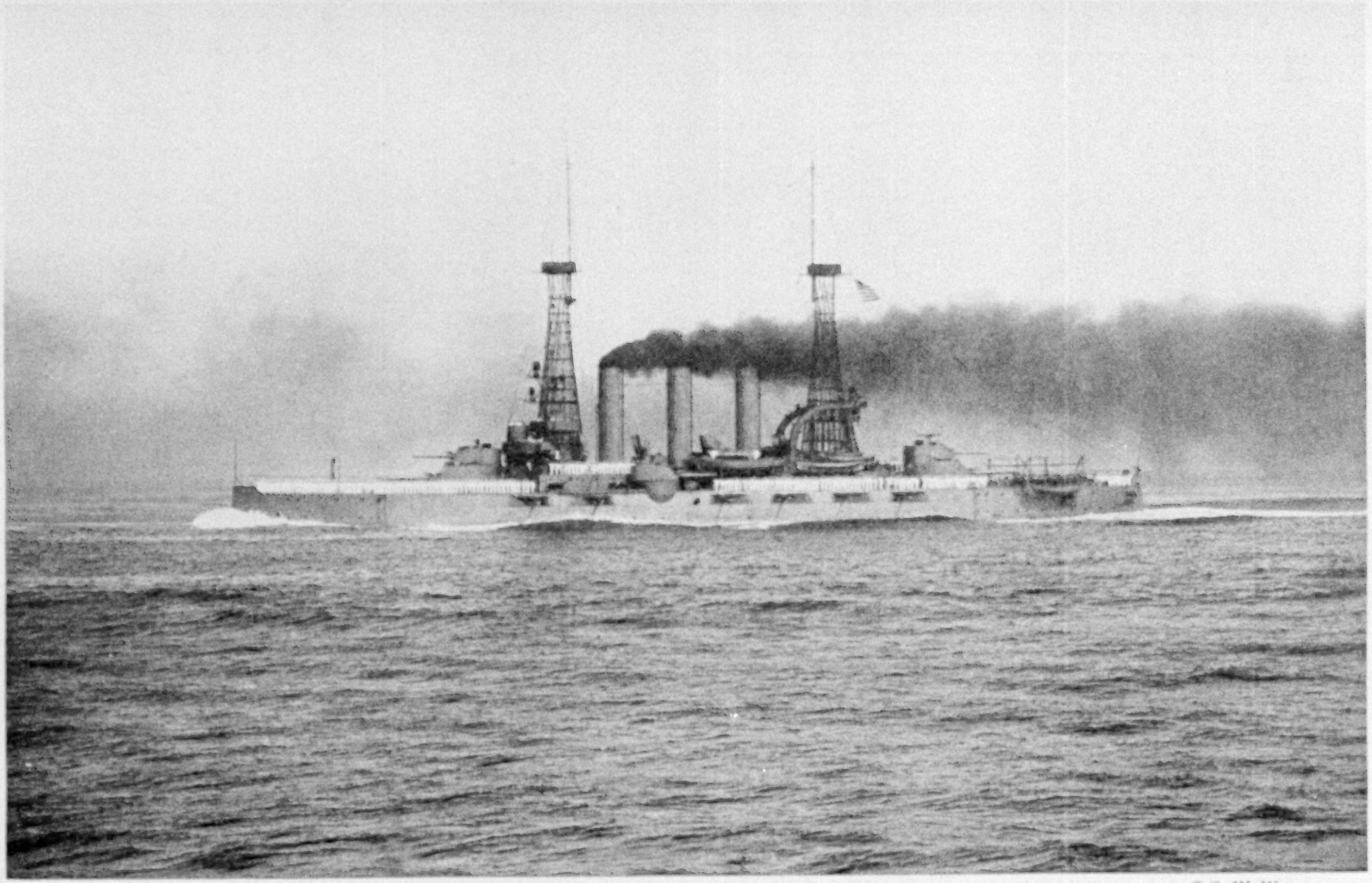

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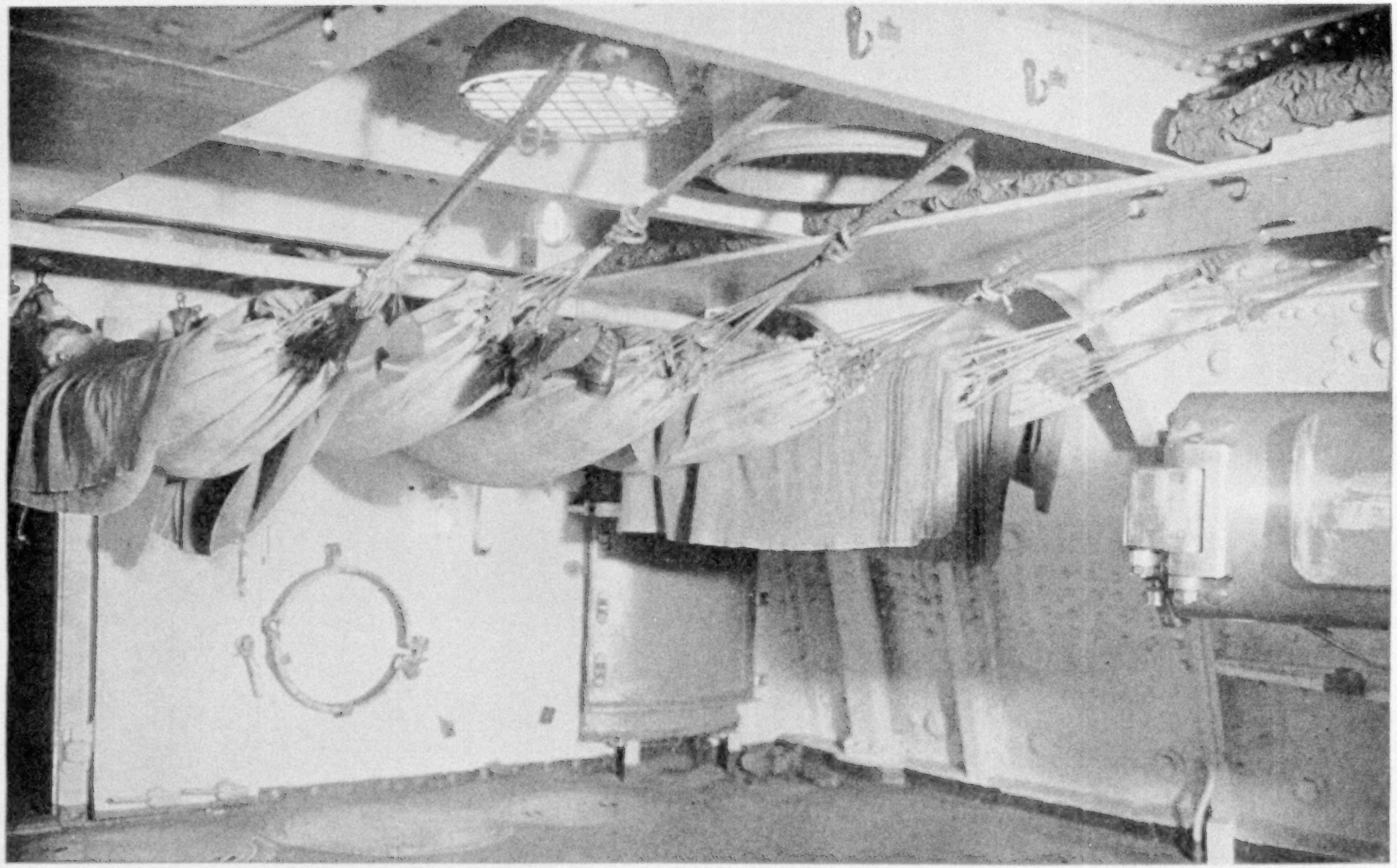
POSING FOR HER PICTURE

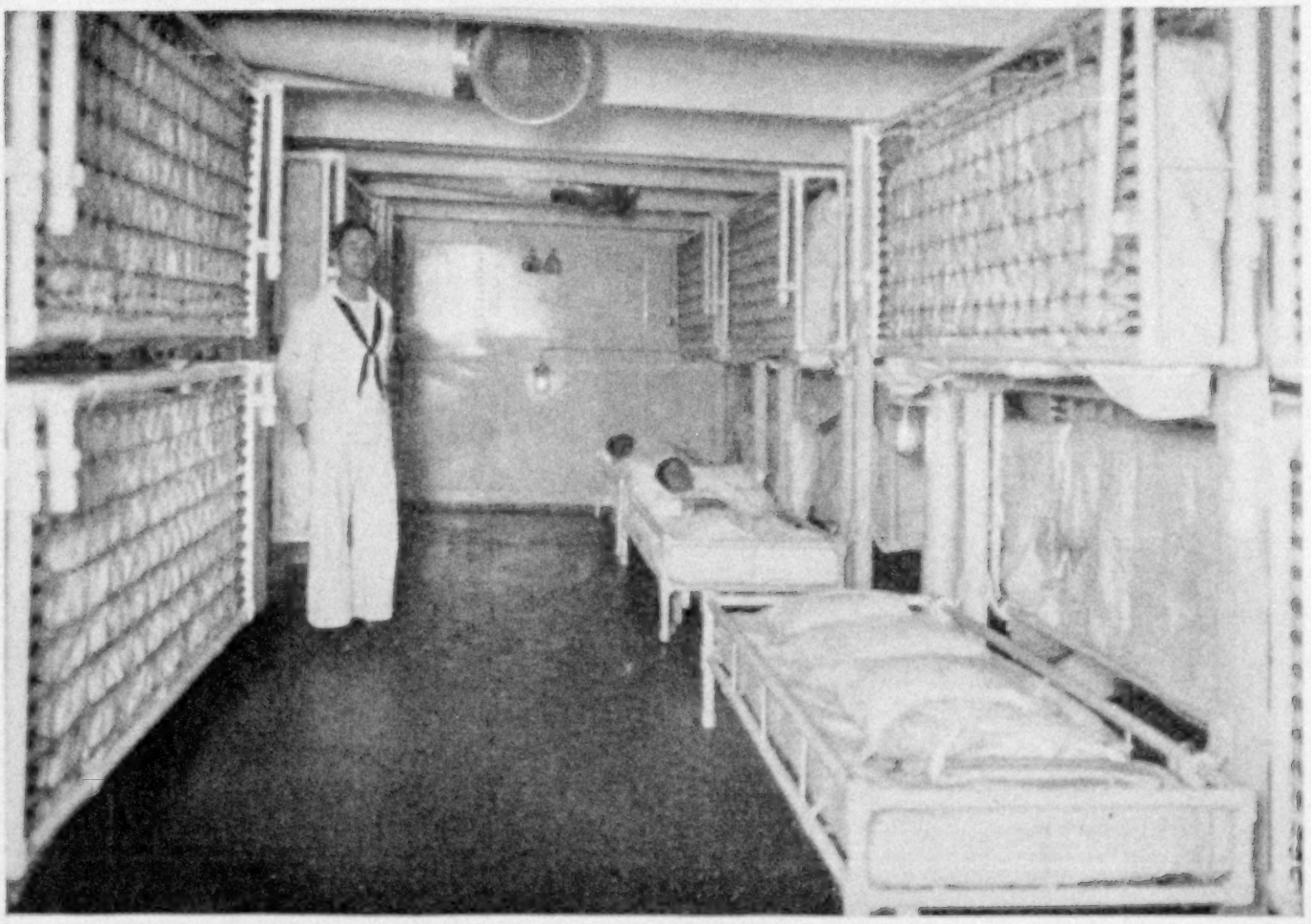
With her crew dressed in summer white and standing at attention, her nose kicking up just the right amount of gleaming spray, her ensign flying outstretched, and the smoke from her funnels of just the proper density, this American battleship is showing herself to the best advantage for the photographer.



Photograph from U. S. Navy Department

MEN ON THE "NORTH DAKOTA" TURNED IN ON BILLETS IN CASEMATES

When gun drills are over, mess gear is put away, darkness overmasters the sea, and taps are sounded, our sailor boy climbs into his hammock and is rocked in this literal cradle of the deep. And does he sleep? Well, Jack is a busy chap all day long, and who knows so well the sweetness of slumber as he who has a rested mind and a tired body?



U. S. S. "FLORIDA": SICK BAY

"Not in the most crowded portions of our most congested cities will there be found so many souls living, breathing, and having their being in a given space as on a large naval vessel, with its crew of more than one thousand. Yet on battleships the health and comfort of the crews are at a maximum."

scholar, scientist, author—who gave all his discoveries and researches and charts to all who sail the sea, thinking never of gain for self or country.

It was a far cry from the rude cabin in the primeval forest of Tennessee, where Maury spent his boyhood, to the gathering of savants in Brussels, where Maury's fame and Maury's greatness made him the central figure and won for him five honors of knighthood, conferred by the rulers of Belgium, Denmark, Russia, France, and Prussia, and so many medals of distinction he hardly had a place to store them. His career is an inspiration not only to the youth of his country, but the whole world, which he made his debtor.

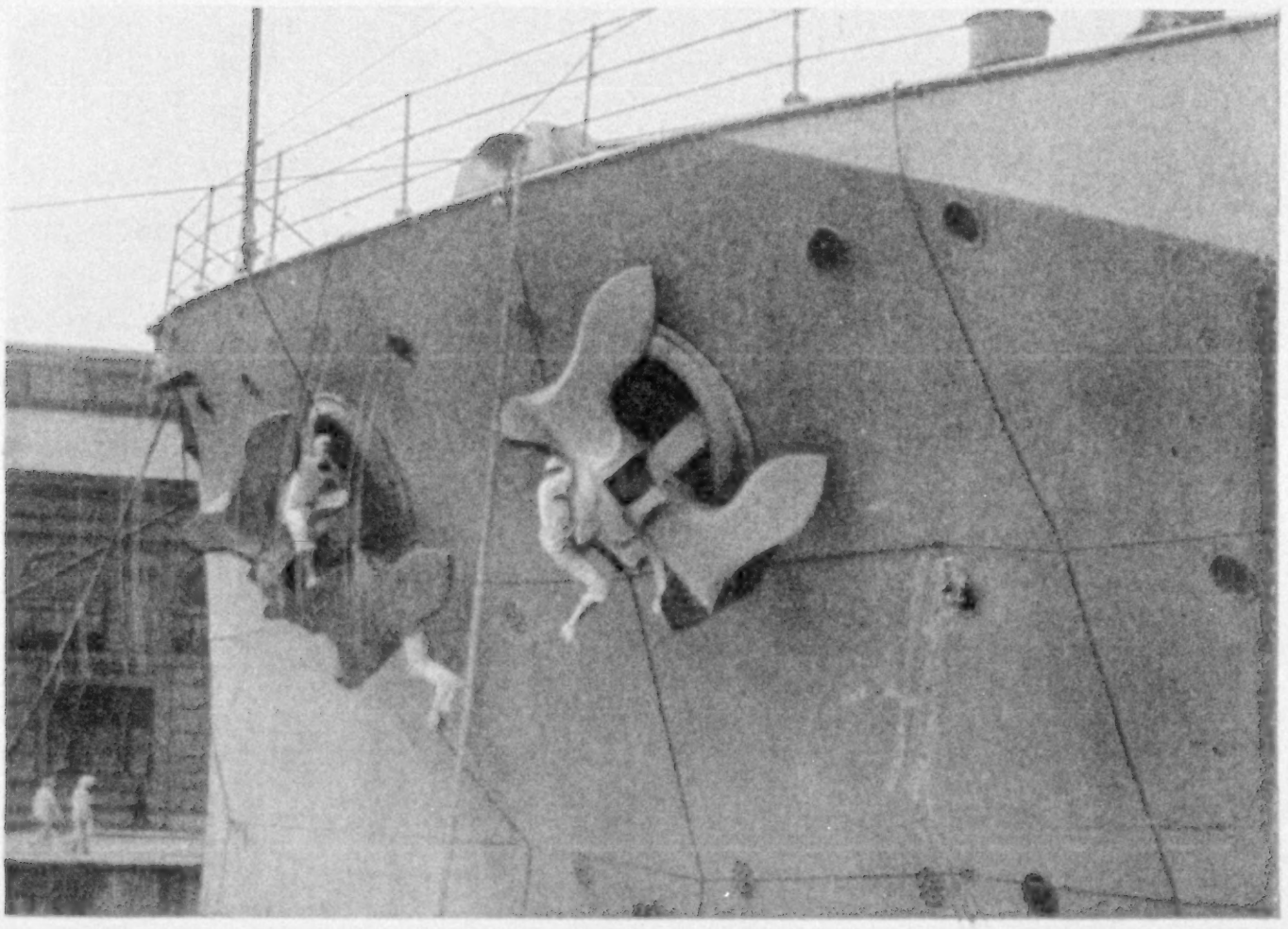
HOW MAURY GREW UP

Maury's father moved from the spacious, open, Virginia plantation when Maury was a small boy. He had the advantage in boyhood of what we call hardships, but which in that day were typical of all homes in the frontier country. Mind and body grew in the open, for hard work on the farm is the best preparation for naval or other rigorous service.

Maury early heard the call to the sea. His elder brother had lost his life in the naval service, and his father opposed Maury's ambition to follow the profession that had robbed him of his first-born, even though the appointment came from Sam Houston, then Congressman from Tennessee. What romantic history hangs around the association of Houston and Maury—fighters both and American pioneers and statesmen, too!

The consuming passion, which made him always follow the path of duty, did not permit even parental objection to dissuade Maury from the high calling in which he was to win primacy.

The Fontaines and the Maurys were among the Huguenots who were exiled



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A SHORT CUT TO THE STAGES

What's the use of climbing a hawser all the way up and over the side when you can climb in by the anchor-chain route?

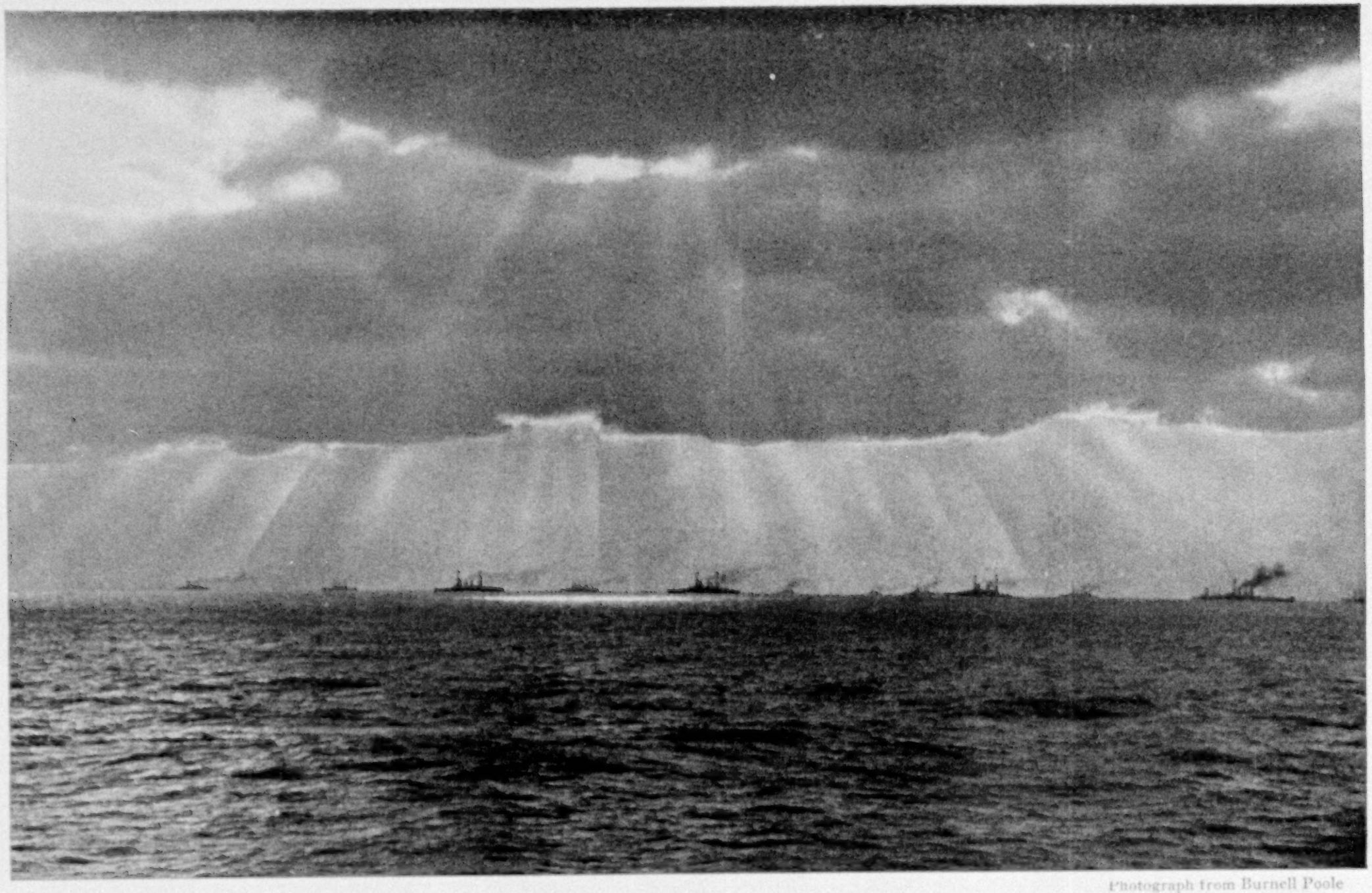
from France for their religion. They found congenial homes in Virginia, arriving in 1714. Jean de la Fontaine, a man of parts, holding high position in France, became a convert to Huguenot preaching. He was hated because of his holy zeal, and his son tells us he was foully murdered, and piously exclaims in his biography:

"O, my children, let us never forget that the blood of martyrs flows in our veins, and may God, of His infinite mercy, grant that the remembrance of it may enliven our faith, so that we may prove not unworthy scions of so noble a stock." That prayer was answered in Maury's life. His pious father read the Scriptures to his children daily, and Maury's memory was so perfect that all his life he was able to quote from the Bible and give chapter and verse as if the Word were before him.

As a young naval officer, writing to his brother, Maury said: "Learn your duties, Dick, from the Bible. There you have them laid down in example, law, and precept." May we not learn the secret of his greatness in such ancestry and such pious training which burgeoned into such wise counsel!

And may we not in this day of appeals to economy and conservation learn from Maury, who, on an income of $19 a month, supported himself and regularly sent one-half of his navy pay to his sister? And may not lovers find in him a kindred spirit when they recall that, when he became engaged, Maury gave his affianced a little seal to be used in writing to him, bearing for the inscription the simple word "Mizpah" ("The Lord watch between thee and me when we are absent one from the other").

Upon Maury's first long voyage, his ship visited the Island of Nukahiva, one of the Marquesas group, where he narrowly escaped becoming the crown prince. Just before the last war between the United States and England, Maury's brother, John, and six men had been put



Photograph from Burnell Poole

BATTLESHIPS OF THE UNITED STATES NAVY STEAMING ALONG IN COLUMN ON THE BOSOM OF THE ATLANTIC

"The navy as a fighting agency, as the embodiment of power, as the protector of the country from aggression, is today the pride and reliance of America"

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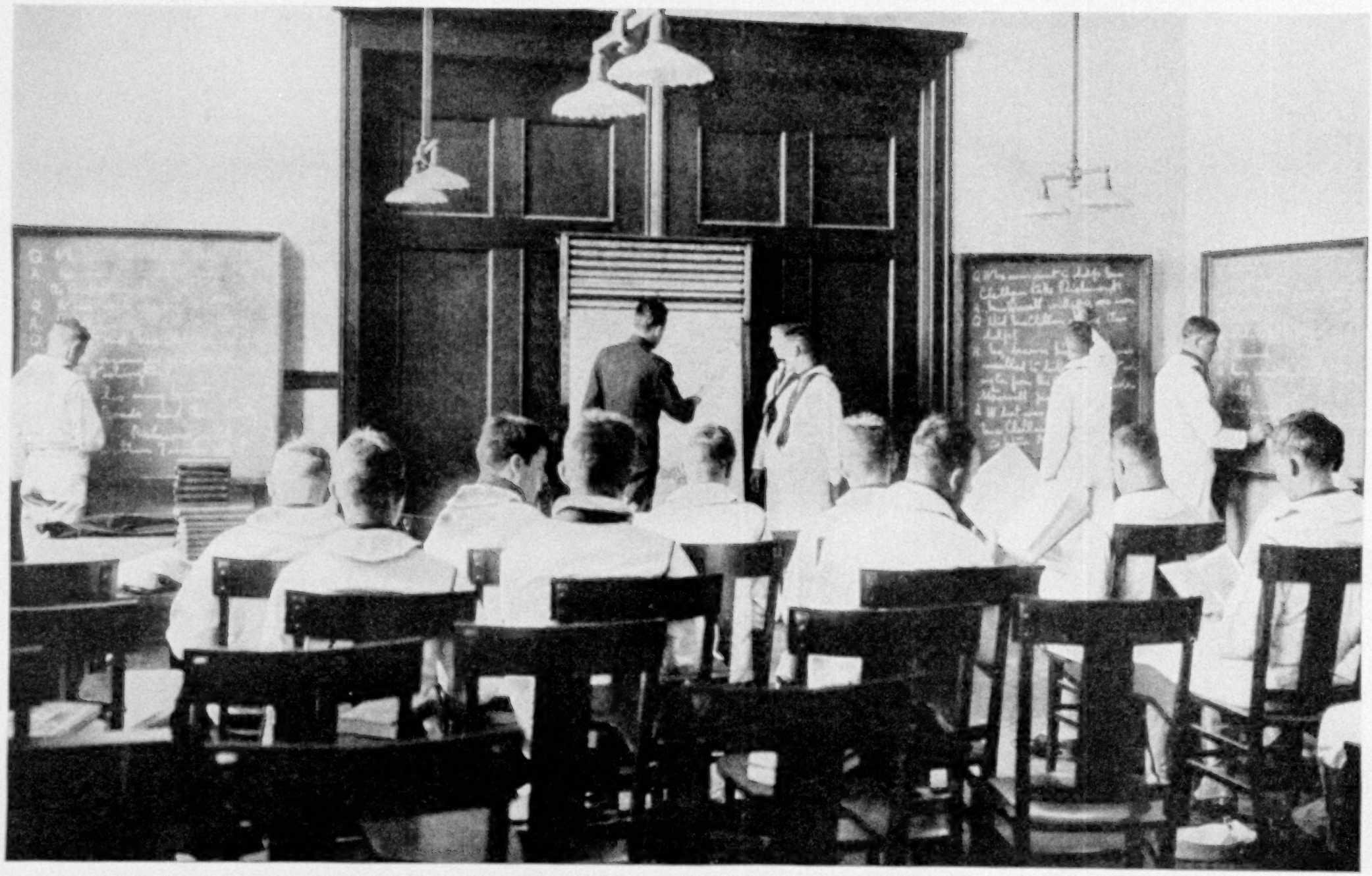


Photograph from U. S. Navy Department

GOING TO SCHOOL FOR UNCLE SAM

Under the present policy the boys who volunteer their lives in the defense of their country are valued as units in the great war machine, as well as collectively. Each sailor counts for something. He is a twice-prized citizen, for he is sturdy in his manhood and patriotic in his heart. When he leaves the navy he goes back to private life with the pride of one who counts his country above himself.

ashore on that island to procure sandalwood. English ships blockaded the American ships in Chinese ports, so that no relief came to John Maury for two years. He was befriended by the king of one of the tribes, and when Matthew Maury visited that island 12 years later the king recognized him from his likeness to his brother and offered to adopt him as his son and heir. King of a heathen tribe and "mated with a squalid savage," could Maury have charted the seas?

DILIGENCE BRINGS ITS PROVERBIAL REWARD

There was no Naval Academy when Maury entered the navy. He had been so proficient in mathematics in the country school in Tennessee that he was called upon by his teacher to instruct the younger boys, and on shipboard he continued the methodical study which made him the first scholar and scientist in the navy.

Using a Spanish work on navigation, he acquired a knowledge of the Spanish language along with a mastery of a subject essential to a seafaring man. In his watches he drilled into his mind the formulas from notes made below decks.

Laying broad foundations, it was not until his voyage around Cape Horn, when he sought in vain for reliable information as to the winds and currents to be encountered and the best paths for the vessel to follow, that this need determined the particular study to which he would devote himself. When but 28 years old he published his treatise on Navigation. It attracted favorable attention in this country and abroad and became the text-book of the navy.

Incapacitated for active service by a broken leg, his ambition for command afloat had to be abandoned, though while on crutches he applied for sea service, which was denied him. Writing to a friend at this time, he said: "I'll content myself with cultivating a few little patches of knowledge. What shall they be? Shall they be light and heat, storms or currents? Ship-building or ship-sailing? steam or projectiles? hollow shot or gravitation? gases or fluids? winds or tides?—or—?"

His "patches of knowledge" grew until they almost covered the geography of the world and all naval lore, as the waters cover the sea. In his famous "Scraps from a Lucky Bag," he advocated the adoption of steam as a motive power and predicted a new era in naval warfare of big guns. Did he dream of a gun that could shoot an hundred miles?

A FORWARD-LOOKING GENIUS

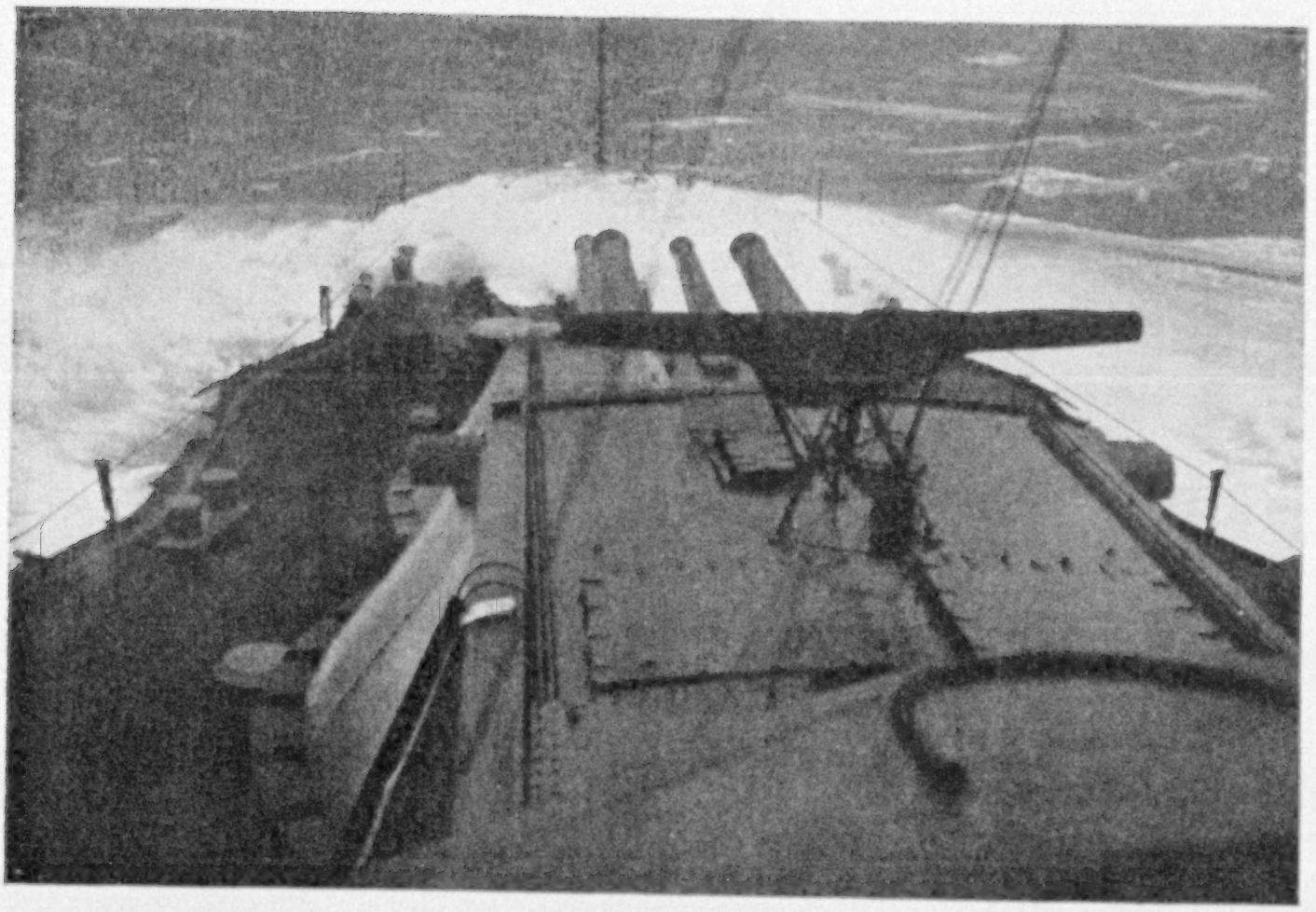
He advocated a naval school for midshipmen, "that they might be instructed in the higher duties of their profession," and urged the use of regular text-books. His new ideas fairly startled old sea dogs, who basked in the glories of tradition and regarded new things as revolutionary. But the reforms that he proposed delighted the thoughtful and ambitious, and stimulated study and exploration and science in the navy.

In 1843, he read to a distinguished audience in Washington, composed of the President and envoys and Congressmen, a paper, "The Gulf Stream and Its Causes," and later a paper on the connection of terrestial magnetism with the circulation of the atmosphere.

In 1844, he was made head of the "Depot of Charts and Instruments," and the *National Intelligencer* truly declared "he transformed the simple Depot of Charts and Instruments into an observatory"—the Naval Observatory—and it has grown until its reputation is world-wide, and other scientific organizations of the government covet its direction.

In late years there has been more than one suggestion that the Naval Observatory, created by Maury and developed by other able naval officers, should be transferred from the navy. In view of such violations of the commandment "thou shalt not covet," it may be well to recall the reason that prompted Maury to accept the post.

Writing to William Blackford in 1847, Maury said: "You know I did not want the place, and only decided to keep it when I heard that it had been promised to a civilian *under the plea that no one in the navy was fit for it.* I then went to Mason and pronounced *that* the repetition of a practical libel and told him he must stand by me. . . . I have solved a problem that has often blistered my



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THE WHITE HORSES OF NEPTUNE: U. S. S. "NEW YORK" BEGINNING TO TAKE SEAS IN AN AUGUST HURRICANE

"Sometimes we see a ship and sometimes we ship a sea," wrote Ben Bos'n. And when a big battleship like the *New York* sticks its nose down into the trough of the sea, you may depend upon it that it is no gentle breeze that agitates the waves.

heart and proved that naval officers are fit for something other than scrubbing decks and tacking ships."

This small depot, literally transformed by his genius, has grown under navy inspiration and under navy direction, and its usefulness in the past, at this critical period, and in the years to come is beyond calculation. No wonder other leaders would like to take over this product of naval vision and naval achievement. By the same token, the navy of the future, with more time for exploration and science, will serve mankind by perpetuating under its own control the valuable service there begun by Matthew Fontaine Maury.

A MANY-SIDED MAN WAS MAURY

Merely to state the varied achievements of this master naval scientist attests his many-sided service. In addition to his purely maritime discoveries and accomplishments, Senator Vest declared "the whole signal-service system of this country originated with the navy, and the man in whose brain it first had existence was M. F. Maury." His system of weather reports has been extended so that on land as well as on sea he was a benefactor, whose ideas have not only made for safety in navigation, but have been of inestimable value to agriculture.

Maury stands easily at the head of naval leaders of peace, and what he accomplished was not for the navy alone, not confined to his country, but became the property of men who follow the sea, as well as men of commerce all over the world. When Maury became head of the Depot of Charts and Instruments, he removed the old log-books, which had been stored away as rubbish in the Hydrographic Office. He extracted the valuable information they contained, collected data from every possible source. He

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ACTIVE SERVICE IN EUROPEAN WATERS: MACHINE-GUN READY FOR BUSINESS

On May 4, 28 days after the declaration of war, American destroyers arrived at a British port to assist in patrolling European waters. The United States Navy was prepared for whatever might come.

furnished new charts and sailing directions to masters of vessels bound for foreign ports, and all captains of ships and others who follow the sea were invited to join Maury in collecting data for making other charts and new sailing directions.

He had the vision and the wisdom to secure coöperation from all parts of the world. Maury writes, in 1848: "The Boston merchants were so pleased with that Wind and Current Chart that they offered to raise $50,000 to buy a vessel and keep her at my orders—to try new routes."

In March, 1849, he wrote: "The charts are going ahead bravely. They are quite as much admired on the other side as on this, and they do turn out exceedingly rich. Some new discovery, some new fact or law of nature, is constantly starting up before us as we proceed with our investigation." It was a period when life was worth living for those who shared Maury's enthusiasm and felt the thrill which new discoveries impart.

A GREAT OCEAN RACE

The papers of 1852 fairly glow with descriptions of the famous, spectacular ocean race between the two first-class ships, the *Governor Morton* and the *Prima Donna*, which attracted as much sporting interest as the deciding base-ball game of our day. These ships sailed together from the port of New York on the fourth day of February, crossed the Equator in the Atlantic Ocean on the same day, though not in the same longitude; entered the Straits of Le Maire the same day and came out the same day; crossed the Equator in the Pacific on the same day and in the same longitude, and arrived at San Francisco within three hours of each other, after a race of 16,000 miles. This was truly a tribute to Maury, and the San Francisco *Times* at that time said: "These two facts demonstrate the accuracy that has been obtained in the science of navigation, and also prove the reliance that can be placed upon the Wind and Current Chart of Lieuten-

ant Maury, whose sailing directions both vessels followed."

What Maury did in saving life by increasing the safety of ocean voyages may not be estimated. Hunt's *Merchants' Magazine* of 1854 calculated that he had shortened the time for voyages to South America and the East Indies by 15 days, and this had effected a saving of $2,250,000 annually in freight charges for the outward voyages alone.

In a report submitted in January, 1855, the Committee on Naval Affairs stated the immediate result of Mr. Maury's labors to be that "ocean voyages under sail are shortened from 10 to 20 per cent. Before the publication of these charts a voyage from our eastern ports to San Francisco, under canvas, occupied on an average 180 days, and in several instances it has been performed in half the time formerly occupied."

The Secretary of the Navy, Hon. James C. Dobbin, wrote that "it is my decided conviction that this officer, by his ability and enthusiasm in the cause in which he has been engaged, has not only added to the honor of his country, but saved millions of dollars for his countrymen."

President Fillmore, in a message to Congress (1851), said that Lieutenant Maury had shortened the passage from Atlantic to Pacific ports about forty days.

WHY MEN SAY REPUBLICS ARE UNGRATEFUL

After an illuminating statement of the value of the labors of Lieutenant Maury, the House Naval Affairs Committee recommended that $25,000 be appropriated, "insignificant indeed in comparison with his services," as the nation's appreciation of the contributions made to the world by this officer. The bill was introduced, and its fate gave fresh evidence to those who believe in the ingratitude of republics. Not only was no money reward voted to him, but in the following month the Naval Retiring Board placed Maury on the retired list, thereby reducing his salary to $1,500!

Maury, like Wilkes and Perry, sought no advantage for himself or his country which other nations might not also enjoy. He secured such coöperation that reports coming from all sources filled more than 400 large manuscript volumes. He had no conception of safeguarding American ships alone. His vision and his services looked to craft that sailed every sea.

He never secured a copyright to any chart, never patented any idea; but all that he learned and all that he discovered his free government gave freely to the whole world. It is because of his unselfish contributions that he is everywhere numbered with the great men who "enlightened the darkness of the world" and live forever with immortals.

He did more than obtain the hearty coöperation which made safe the paths of the sea. He was a "living light-fountain," in that his spirit of faith and devotion caused sailors to see the Creator whom he worshipped.

A SEA DOG'S TRIBUTE TO A COMRADE

Captain Phinny, of the American ship *Gertrude*, gave expression to the new and higher vision that coöperation with Maury brought to him and other sea captains. Writing from Chincha Islands to Maury in January, 1855, Captain Phinny said:

"I am glad to contribute my mite toward furnishing you with material, not only of pointing out the most speedy routes for ships to follow over the ocean, but also teaching us sailors to look about us and recognize the wonderful manifestations of the wisdom and goodness of God by which we are constantly surrounded. For myself I am free to confess that for many years I commanded a ship, and although never insensible of the beauties of nature upon sea and land, I yet feel that until I took up your work I had been traversing the ocean blindfolded; I did not think, I did not know, the amazing combinations of all the works of Him whom you so beautifully term 'The Great First Thought.' You have taught me to look above, around, and beneath me, and to recognize 'God's hand in every element by which I am surrounded.'"

Maury's whole life and service taught that greatest of all lessons not only to sailors, but to all mankind. And that was his greatest contribution, because the man is always greater than his achievements, and faith must ever be the inspiration to noblest endeavor.

FORERUNNERS OF FAMINE

By Frederic C. Walcott

Of the U. S. Food Administration; Author of "Devastated Poland"

SEVERAL years ago Bloch, a well-known Russian banker and economist, said that the next great war would be won not by fighting, but by famine. There is already much evidence to prove the truth of this prediction.

A brief review of the cost of this war in innocent victims shows that famine and starvation, or food shortage, has proved one of Germany's most potent weapons of conquest, and has actually caused as many deaths as has all the fighting in Europe during the last three and one-half years, and far greater suffering.

Moreover, it includes among its victims a large percentage of children and women of the next generation and the mothers of a nation. But, in consequence of the lowered vitality of all the working classes, the decreased resistance to disease, and the decline in the birth rate, the loss suffered in this war by the nations short of food is actually far greater than the loss of those killed in battle.

GERMANY USES FAMINE AS A WEAPON

Furthermore, food shortage has created in those countries conquered by the Central Powers a condition which Germany has used to her great advantage. By the power of famine she has enforced the deportation of the industrial peoples, the backbone of a nation, from their native countries into Germany, thus forcibly breaking down the family unit, causing indescribable terror and mental anguish, which will be reflected in the offspring of these devitalized people for generations.

Russia's shortage of food, due to the breaking down of transportation in the Empire, proved one of the prime factors and one of the inducing causes of the Russian revolution. The bolshevik, which has been the outgrowth of these disturbances, now dominates a majority of the Russian people.

It is representative of their social organizations and of their secret societies. It has taken on a spiritual character, creating in the minds of its followers the spirit of a new crusade, as in the early days of Christianity and of Mohammedanism, and associating spiritual ideals with political ideals, as in the French Revolution.

A DANGEROUS AND CONTAGIOUS DOCTRINE

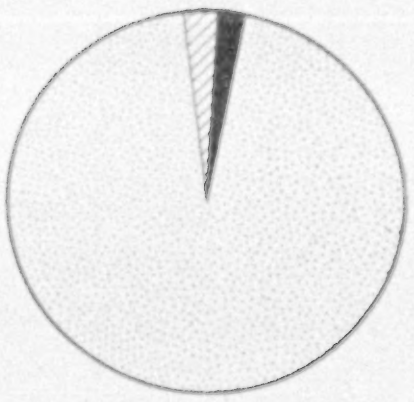
This new and dangerous political doctrine, if it can be called that—in reality it is unbridled anarchy—teaches the people to believe that no government is needed, that law is unnecessary, that the will of the individual is all-sufficient, and that property and land are common to all. In its early stages this "go-as-you-please" bolshevism—Russian for "wanting much"—is popular with the Socialists and working people all over the world.

It is very contagious, and now threatens to spread to Germany, England, and possibly the United States. Six months or a year's trial of it will probably bring about in Russia a financial debacle, plunging the people, industrial concerns, and banks of Russia into absolute bankruptcy. In the end, it may prove of benefit through its collapse, thus demonstrating that extreme socialism, of which it is the embodiment, is a disastrous thing. It is clearly our duty to build up a wall against attack from this source—an attack which might lead to our ultimate national downfall.

Russia is apparently out of the war, so far as any effective fighting is concerned, and until she can reorganize her body politic and railroad transportation, she will not be a material factor in the world's food supply; she will be barely self-supporting during her reconstruction period, unless reorganized by Germany.

But if Germany has access to the port of Odessa, and thus, via the Black Sea, to the grain and meat supplies of south-

The lined rectangles represent the deaths by fighting. The black rectangles represent the deaths by famine.



The circle represents the total population of the Central and Allied Powers (the United States excepted), also territory conquered by the Central Powers.

The black area within the circle represents deaths by famine. The lined area, deaths by fighting.

THE TOLL OF HUMAN LIVES EXACTED BY THE SWORD AND BY STARVATION SINCE THE WORLD WAR BEGAN

ern Russia, as she now seems to have, then Germany may be able, in time, to supply her principal needs in food, beef, animal fats, and leather; for the transportation system from Odessa to Lemberg, and thence through Galicia into Germany, is unimpaired.

HUNGER FORCES ROUMANIA TO PEACE

The Roumanians, driven back by the Germans into an unfertile corner of their country, are face to face with starvation, and are cabling to us frantically for food and clothing. Roumania has been compelled to make peace with Germany through sheer desperation, due to food shortage and to her being entirely surrounded by enemies.

In Serbia the conquering armies are living from the land at the expense of the native population, as in Poland and Roumania, the Hague Agreement to the contrary notwithstanding; and famine stalks those lands in consequence.

In the Turkish Empire, where the poor are always hungry, the officers have been allowed to speculate in foodstuffs. The limited stocks have been bought up to line the pockets of the gamblers, and prices have soared beyond the reach of

THE BOUNDARY LINES OF EUROPEAN NATIONS AS DRAWN BY THE GAUNT HAND OF HUNGER

the poor, who have been reduced for more than two years to charity rations and starving conditions.

Added to these appalling conditions, the Germans have stripped most of the factories in the conquered countries of their raw material, thus depriving the industrial classes of their sole means of livelihood. Picture the despair created by this paranoiac action that has first robbed its victims of all their capital, then, by supporting the conquering hordes on the scant native food supplies, forced upon the inhabitants the most hideous of all forms of suffering—starvation—and then used their starvation to break up families, deporting members to reinforce the depleted industrial ranks of the aggressors; and finally has drawn around this suffering of thirty millions of innocent victims a steel curtain, so that the world cannot look on to sympathize or relieve, and you have a sum total of mental and physical anguish that staggers the senses.

THE DARKEST PAGE IN HUMAN HISTORY

Nothing to compare with it has ever happened before in the history of the

PRUSSIAN SOLDIERS STRIPPING POLISH HOMES OF FOOD

"In Poland the conquering armies of the Huns are living from the land at the expense of the native population, the Hague Agreement to the contrary notwithstanding; and famine stalks that land in consequence."

human race; this is the havoc that blackens the map of Europe, and it has been wrought deliberately by a single nation to further its own ends. For the last three and a half years the most powerful weapon in Germany's hands to complete the abject subjugation of her victims has been a food shortage.

It will take generations for these famine-stricken countries to recover from the losses suffered in this period, to say nothing of the hopelessness of their outlook resulting from the almost complete destruction of their property by the Central Powers. They have been robbed of their homes, live stock, and their agricultural implements. Their factories have been pillaged, many destroyed, and the raw materials shipped to Germany.

In a word, the ravages of war, as waged under German leadership, plus the ravages of famine, which in this case is the direct result of war as waged by the Central Powers, have well-nigh crushed

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FORTUNATE ARE THESE FORLORN FRENCH PEASANTS TO HAVE EVEN A JUG OF WATER AND A CRUST OF BREAD AFTER THE HUNS HAVE STRIPPED THEIR LAND

Not content with supporting their conquering hordes on the fruits of northern France, which they overran, the Huns in their retirement destroyed the civilian inhabitants' means of securing a livelihood when farm houses, farm implements, and smiling orchards were ravaged beyond redemption. To the left is seen a veteran of the valiant French army invalided home because of the loss of a leg.

Photograph from Serbian News Service

THESE SERBIAN CHILDREN OF TRAGEDY HAVE WITNESSED THE ASSASSINATION OF THEIR HOMELAND

A scene in Belgrade after its occupation by the Austrians. Mr. and Mrs. Edward Stuart, of the Serbian Relief Commission (American Red Cross), are surrounded by orphaned waifs of a land which was first conquered by the sword and then starved to death

most of the smaller nations of Europe, leaving the peoples of Poland, Belgium, northern France, Serbia, Roumania, and Armenia without capital or hope, unless some great wealthy nation comes to their rescue after the war.

If the war continues another year, the belligerent nations of Europe will be so impoverished that for the next generation there will be a wild scramble among them to get on their own feet—a fierce, uncompromising commercial war, for which Germany has already laid the most elaborate plans.

THE PART FOOD PLAYS AT THE FRONT

What part is food playing on the other side of the battle lines with our associates in the war—England, France, and Italy?

Italy, although torn by political intrigue, might not have lost in two weeks all the ground her armies had gained in two years but for the fact that there were serious food riots in several of her principal cities immediately preceding the retreat last fall. The Austrians captured 400,000 tons of wheat and several of the most important Italian sugar refineries. If they succeed in taking the northern valleys before May, they will have a large part of the sugar crop of Italy and most of the refined sugar.

Italy is still very short of food, chiefly sugar and wheat, in several districts, and her needs must be supplied by imports if she is to continue in the war. Italy's fuel is practically exhausted—coal is $140 per ton—and as there is scarcely enough to supply the railroads, an unequal distribution of the foodstuffs in the country has resulted.

In France, the cereal crop in 1917 was less than 40 per cent of the pre-war average; but since before the war France was obliged to import 30 per cent of her food, she will require 60 per cent this year. France, because of the abnormal uses for her transportation facilities, shows a very unequal distribution of foodstuffs, so that in some districts today the people are living from hand to mouth, practically on cereals. France has large areas that are entirely without native wheat, because of the killing of the winter wheat last year. She is also very short of animal fats and dairy products.

England is fortunately more nearly self-supporting, thanks to a large potato crop; but even England must have meat, animal fats, sugar, and some wheat. She is today getting 65 per cent of her total food supply from America.

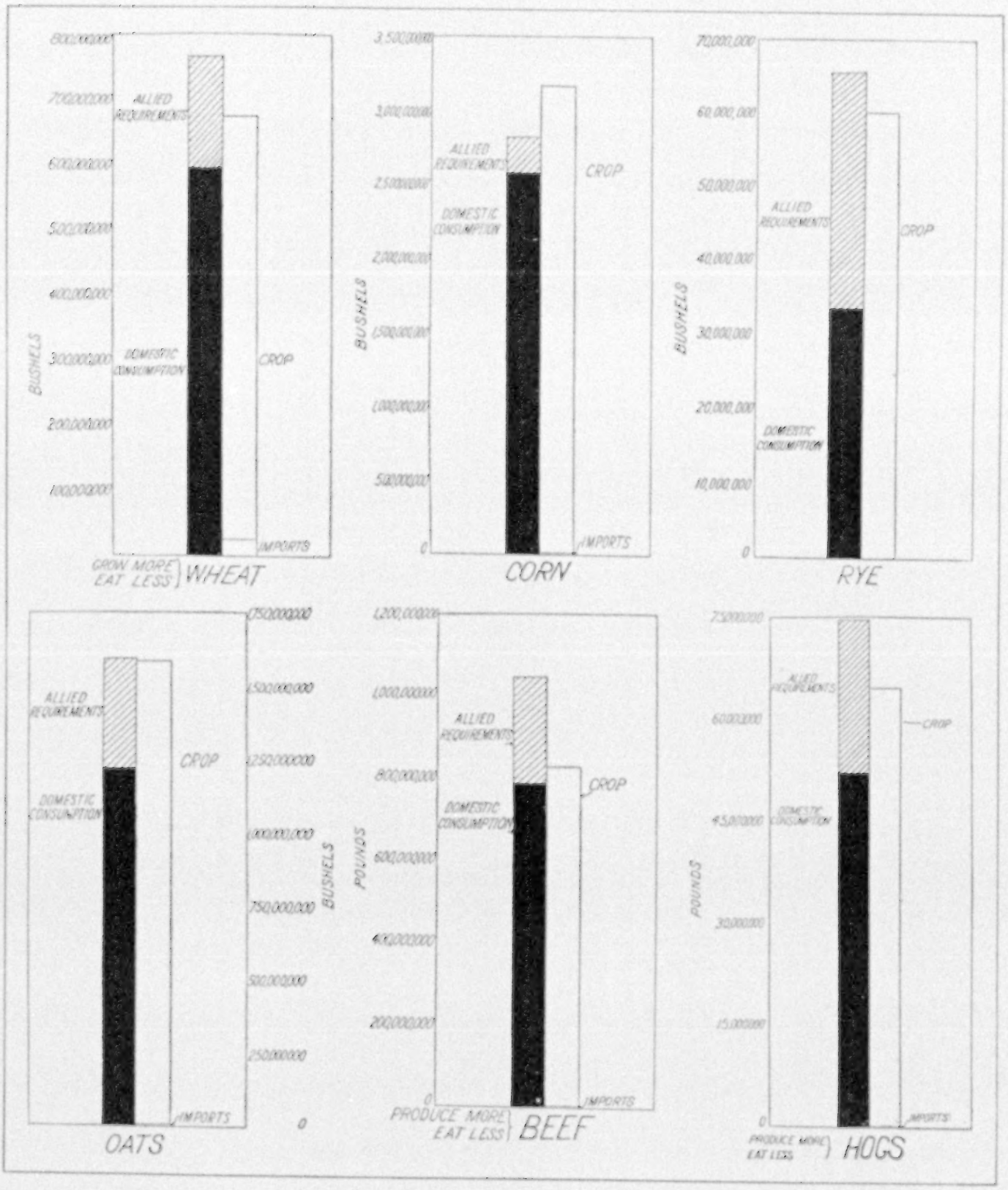
CONDITIONS IN GERMANY

In Germany, the industrial conditions show marked deterioration. Germany is reported as gradually failing. Her shipments of coal to neutrals are only 60 per cent of what they were a year ago, which means that she is having difficulty in maintaining the output of her mines. Labor is getting more scarce. The timbering for the mines is more difficult to secure; it has come largely from Sweden and Poland. The mining output is falling off, while the internal uses for coal are increasing.

Judging from statistics available here, the output of iron and steel is also falling off. No non-essential industries are allowed to run, and the quality of all manufactured articles that come from Germany is inferior to the quality at the beginning of the war. Her steel rails are not as good as they were, because there is a shortage of nickel; her rolling stock and transportation equipment are visibly breaking down.

In foodstuffs, Germany is on the whole rather better off than a year ago. She has more grain; she is exporting substantial amounts of wheat to Sweden at the present time. The flour ration has been brought up from 220 grams per capita last year to 250 grams this year. Her potato crop, which in 1916 was well below the pre-war average—a total of 28,000,000 tons—was last year 34,000,000 tons. Her live-stock is sufficient to carry her through. She is well supplied with alcohol for munition works.

There was a serious failure last season in fodder; consequently she must reduce her live-stock herds and consume much less milk than last year. Her milk production, because of the failure of the fodder crop, particularly hay, is only one-third of normal. The pinch will come, if at all, next summer, partly from lack of animal fats, partly from shortage in industrial commodities, such as wool, railway equipment, and cotton. No fod-



A FOOD RESOURCES BAROMETER OF SUPPLY AND DEMAND

The black column on the left represents our normal domestic consumption. This is surmounted by the lined column representing the amount which our Allies require. The white column to the right represents the crop resources available to satisfy the joint demands. As will be readily seen, in all save corn our normal consumption, plus the Allies' vital needs, far exceeds the supply. America is obligated to curtail consumption and increase production until the right and left hand columns balance.

der, wool, or cotton must get out of this country to any neutral country that borders on Germany or that has any way of reaching Germany.

Private hoarding apparently cannot be checked, as detection of it disturbs the peace of the community, which is given as the excuse in Germany for not at-

tempting to enforce the law; therefore, the rich are all hoarding, thus causing great unrest among the poor. As already indicated, they have rather more grain than a year ago, more potatoes, less milk, and, as they have killed off some of their cattle, they have rather more meat than a year ago.

GERMANY COUNTERFEITS RUBLES

Supplies from Russia will not be available for months, on account of the complete breakdown in transportation. Gold has practically disappeared from the country; and Germany, when the Russians were willing to sell, began printing counterfeit Russian money (rubles), using counterfeit dies and the identical paper that Russia had always used (which they secured from Sweden). This paper money was good for a time, but now even the Russian peasants decline to accept a paper ruble.

This spring Germany, while negotiating for peace, has adopted desperate measures for carrying on a successful offensive against England. The only important unknown factor in this struggle—assuming that there will be no serious disaffection in Germany on the part of the working people—is the English and American workingman. If he will hold and work loyally, the war can be won and the Prussian system eliminated from the world. It behooves America to wake up and act quickly.

PROBLEMS OF FOOD CONTROLLERS

The United States must export ninety million bushels of wheat from our present supply. We already have between twenty and thirty million bushels less in this country than we had last year. What is our duty in this matter? We must send to our Allies about one-quarter of all the wheat we have left, and this must be saved by substitution; but substitution is not going to save enough.

We must teach the people of the United States actually to reduce consumption—to eat less.

The well-to-do of this country must eat less bread and cereals of all kinds; *we should eat practically no wheat for the next four months.* Self-denial and sacrifice must be our duty; they will contribute largely to the upbuilding of American life.

Food control in Europe has been tried many times, never effectively, except by Germany. Increased wages, due to the war, invariably result in increased food consumption. It is the same in this country as abroad, and is particularly marked in Italy.

Since August 10 of last year we have had nine months of food administration. Germany begins to regulate prices at the point of consumption, where the consumer takes the food from the retailers at certain fair retail prices arbitrarily set up by the authorities, who, by deduction, work back to the point of production. This invariably results in a price to the producer that is unsatisfactory and could not be forced upon him without causing a falling off in production, except in Germany, where government control is absolute.

OUR METHOD OF FIXING PRICES

In the United States we have built up the retail price in the reverse way, by starting at the point of production—that is, paying the farmer the market price and building up the price to the retailer by adding arbitrary differentials. This gives a price to the producer that will increase production because it is profitable, and at the same time eliminates speculation, hoarding, and profiteering by the middlemen, thus reaching a fair retail price, which protects the consumer.

The elimination of speculation and hoarding and the control of profiteering by government regulation are absolutely necessary in time of war, and probably would prove beneficial in normal or peace times; but arbitrarily to control prices by government authority, either at the source or at the point of consumption, invariably results in decreased production.

The most effective way to stabilize prices is to centralize buying and stimulate production without attempting to interrupt the natural economic law of supply and demand by price-fixing. Price-fixing has never been effective, except possibly in Germany, and the penalties for the pursuance of such a policy may be cumulative; but it is to be hoped that out of these experiments to stabilize

the necessities of life some method, or methods, will be found which can be adopted as a permanent governmental policy, and become one of the effective and much-needed ways of protecting the poor and mitigating the grievances that now exist between employer and employee.

THE BURDEN OF PROFITEERING FALLS UPON THE WAGE-EARNER

The Food Administration has no power to fix retail prices; but through the license system we can control to a large extent the sales to the retailer, and thus give notice to both the retailer and consumer of what the Food Administration considers to be a fair price and fair profit.

The basis of "fair profit" during the war is the pre-war profit in any given article or business. Anything more than this results in the discontent and the misery of the people, for in the last analysis the burden of unfair prices of food falls upon the working man and his family.

We have been able to support this stabilization of prices by the embargo, which has placed in our hands foodstuffs that would otherwise have gone to neutral nations, thence in many cases to Germany. This has resulted in practically eliminating speculation, hoarding, and profiteering.

WHAT THE FOOD ADMINISTRATION HAS DONE FOR US

It must always be remembered, however, that we are in an era of high wages and high costs, and the producer must be protected at all times. This is basic with all successful food administration in a democratic country, and it must never be lost sight of.

The accomplishments of the Food Administration during the past nine months have been these:

First. It has fostered what we may call the psychology of service, which is the foundation of every great patriotic movement. We have made material progress in establishing in the minds of the public the fact that the saving of food by substitution is a definite war service on the part of the individual, and this service, which comes from the individual conscience, has in a large degree nullified the increased consumption which naturally would result from largely increased wages.

Second. It has secured and made acceptable to the public a measure of government control—wheat and sugar forming the best illustrations. The power lodged with the Administration to buy and sell for government account has had a tendency to stabilize prices. The price-fixing, in the case of wheat, has given the producer encouragement to increase production, and the resulting elimination of speculation and hoarding has protected the consumer.

Thus, in spite of a short supply—there was a serious shortage in August, September, and October, 1917—the wholesale price of flour per barrel has been reduced $3, whereas without the Food Administration flour might easily have gone to $25, or even $30, per barrel during this danger period.

The direct result of wheat control has been the protection of the price of bread by setting up arbitrary differentials, and the price of wheat bread—the working man's staff of life—has been brought down. The price of bread throughout the United States is today 30 per cent less than it was in July, 1917, the month before the food bill was signed, and only 30 per cent more than the pre-war price, although the farmer is getting a price for his wheat that is 109 per cent above the pre-war average. Thus it will be seen that the consumer has 79 points in his favor as a result of the elimination of speculation, hoarding, and profiteering—a good result which could only have been attained by government control.

THE HOG AND CORN RATIO 13 TO 1

Third. Something has been accomplished in the matter of meat control. Beef control, it is true, has not been attempted, except through the encouragement of voluntary effort to reduce the consumption. When the prices of meat go up, as they invariably do in war times, the burden of consumption falls more heavily on breadstuffs, which are the cheapest form of food. Beef is now low enough. If it goes lower, the farmer will let his cattle be slaughtered indiscriminately because of the high price of feeds. Hogs have been stabilized in price by es-

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HOW OUR ALLIES' FLOUR BARREL WAS FILLED BEFORE THE WAR

HOW OUR ALLIES' FLOUR BARREL MUST BE FILLED IN 1918

THE ALLIES' FLOUR BARREL

Owing to the destruction of shipping, until the new American merchant fleet is constructed, but little wheat and flour from India, Australia, and Argentina can be transported

tablishing a tentative price of $15.50 per hundredweight—a price arrived at by setting up the ratio between corn and hog as thirteen to one—that is, thirteen times the price of a bushel of corn gives the price per hundredweight of hog.

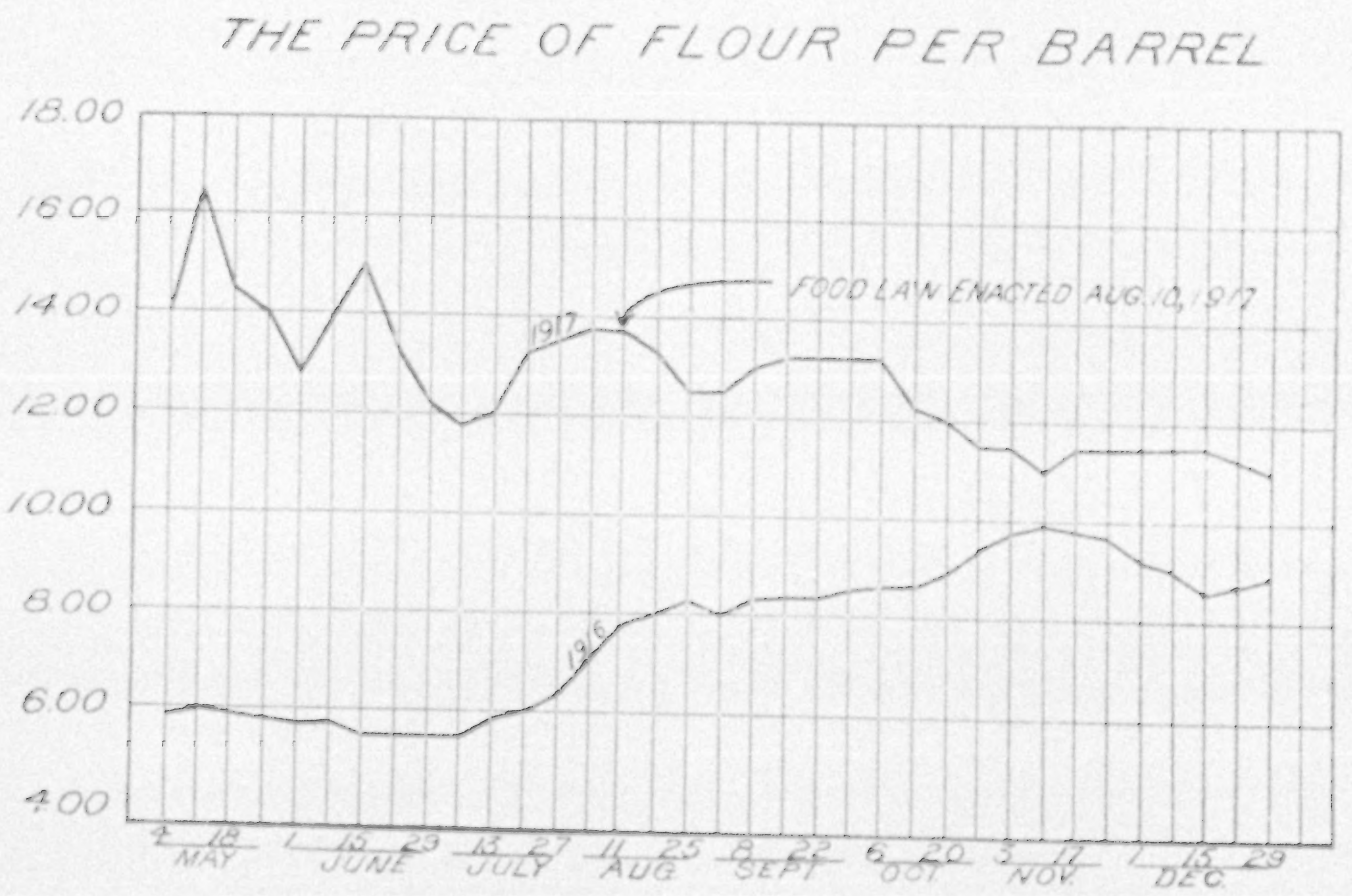
Fourth. Sugar control has been very marked. We gained little in balance on our sugar supply in the six months from August, 1917, to February, 1918. The price, however, in spite of the famine in sugar during the fall months of 1917, was brought down two or three cents per pound and held there. Congress did not give us power in our bill to buy and sell sugar; therefore we had to allow the refiners to be the purchasers with and for the Allies; but, in spite of this lack of complete power, the public has been protected and France has her sugar from our supply, sugar which we must get along without.

CONDITIONS MUST BE FACED IN WAR TIMES

War is a period of economic degeneration, so that although government control in the necessities of life may not be essential, or even advantageous in normal times, in war time we must choose the lesser of the two evils; for without control then, with prices running riot, we should face a national disaster. It is only in this way that we can make life tolerable for the working man.

Shipping is constantly diminishing. We of the United States cannot do our share in the fighting for another ten months, even with good luck. Australia has an abundance of wheat, but it takes nearly three times as much shipping to accomplish a given task of transportation between Australia and Europe as between the United States and Europe, and the situation imperatively requires that all shipping be confined to the shortest route.

If there is any falling down from now on in our proposed program for ship-building, even Argentina cannot be reached to the degree that the needs of the situation demand. It is easy, essentially, to create a new ship, as it were, by taking a ship from the Argentina service and applying it to our carrying service to Europe. Every ship we take over from the Argentina trade gives us es-



THIS CHART ILLUSTRATES HOW THE FOOD LAW, ENACTED IN AUGUST, 1917, HAS NOT ONLY SERVED TO STABILIZE, BUT TO LOWER, THE PRICE OF FLOUR IN THE FACE OF AN EVER-INCREASING DEMAND

sentially an extra ship for our European service, as the haul from Argentina to England is twice as long as that from the United States to England. The requirements of England and France in grain, as well as beef, however, call for every atom of exportable surplus now in Argentina.

PARING FOOD SHIPMENTS DOWN TO THE BONE

Because of the difficulty in reaching India and Australia, and on account of the shortage of shipping, the Allies' cereal requirements, of which they declared the irreducible minimum to be 25,000,000 tons, were arbitrarily reduced at the Allied Conference in Paris to 17,000,000 tons. We are planning to supply them with these 17,000,000 tons of foodstuffs, or approximately 25 per cent less than the Allies themselves considered their actual minimum requirements; to satisfy even this reduced schedule will tax the people of the United States severely.

Every family in the United States with any available land should endeavor to become as nearly self-supporting as possible in foodstuffs. Thousands of acres along railroad rights of way should be made available for planting to those living near, and the farmer must be protected and encouraged by State and Federal aid in prices, labor, and machinery to make the earth yield its maximum.

We must feed our associates in the war, their civilian population and ours, their armies and ours, while they fight to liberate civilization from the death grapple with a nation gone mad; and after the struggle is over and all the nations of Europe are depleted, the United States may be the only nation able to relieve the appalling needs of the innocent victims of the war now being waged by the ruthless Hun.

We were late in entering the war; for this reason we owe what we have saved to those who suffered while we delayed. Not only must we help them now, but we must lighten their burdens of reconstruction.

Such relief could be organized and administered in the form of huge govern-

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Photograph from American Red Cross

YOUTHFUL SONS OF ITALY DRINKING THEIR HEALTH IN AMERICAN RED CROSS SOUP

A public kitchen scene at Palermo, where refugee children are fed daily

mental building and loan associations, to which the peoples to be relieved should contribute their fair proportion in labor and materials. Such relief would encourage, not pauperize, and, given without hope of financial or commercial gain, would strike a new note in the world's history.

We must hold firm to our ideals. We have a present and a future obligation; we must pay the full price ungrudgingly, both in fighting and rebuilding. We must demonstrate to the world the principles of true democracy, and thus hasten the dawn of a more perfect day. Then, indeed, may the hatred and bitterness of this war give way rapidly before the light of human kindness, and "Peace on earth, good will to men" become a living reality in a world where justice will reign.

AN APPEAL TO MEMBERS OF THE NATIONAL GEOGRAPHIC SOCIETY

To the Members of the
National Geographic Society:

You and the members of your household constitute three million thoughtful, intelligent, patriotic Americans. Tens of thousands of you have already made supreme sacrifices for the cause of freedom. Some of you have given your sons, your brothers, your husbands, to our country in its hour of greatest need. Others of you have given of your wealth, your plenty, your competency. Still others of you have given your time and your energy to Red Cross work, Liberty Loan campaigns, and other activities which have profited by your service and by your enthusiasm.

To those of you who already have given much there will come a special joy in the realization that there is a new opportunity for helping by personal deprivation; to those few who have not yet enlisted in the service of their country there should come a sense of relief and satisfaction that the opportunity is at hand to prove to one's self that his soul is not dead to the appeal which lies in the thought that "this is my own, my native land."

The opportunity which now presents itself to each member of the National Geographic Society is the opportunity of *pledging himself and his household to eat neither wheat bread, wheat cereals, nor pastry made of wheat flour until the new wheat crop is harvested.*

You have read the preceding article by Frederic C. Walcott, of the United States Food Administration—a simple, concise, unexaggerated statement showing that famine and starvation lie ahead of our Allies in Europe unless America is willing to practice the virtue of abstinence from that food product which is vital to the life and health of the millions across the seas who for nearly four years have suffered the horrors and the devastations of war at first hand.

America normally consumes 42,000,000 bushels of wheat each month. In order to supply the Allies with the absolute essentials of life, the American consumption must be reduced to 20,000,000 bushels a month until the next harvest.

It is not enough that you, members of the National Geographic Society, agree to use only half the wheat which you would normally consume. There are thousands, millions, of Americans who are careless, thoughtless, wasteful. They will not and cannot be made to practice such economy.

The obligation, therefore, rests upon you, who realize the situation, you, who have fortitude of purpose and the love of humanity in your heart, to do more than curtail your wheat consumption. It is not merely your duty, but your opportunity, to pledge yourself to *total abstinence* from wheat bread, wheat cereals, and wheat pastries until such time as the critical situation is relieved.

Such abstinence does not entail privation, bodily suffering, or decreased physical efficiency. Happily, there has been a bountiful corn crop. We in the United

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SHIPBUILDERS SWEARING ALLEGIANCE TO THEIR COUNTRY

"I pledge allegiance to my flag and to the Republic for which it stands—one nation, indivisible, with liberty and justice for all"

© Committee on Public Information

A NOONDAY PATRIOTIC MEETING AT A SHIPYARD

This array of smiling faces probably includes blood of every race on the globe, but they are all enthusiastic Americans, eagerly building ships to bridge the Atlantic and doing their part to make the world safe to live in

States cannot suffer for lack of bread so long as this great cereal, the staff of life for the pioneers of Colonial days, is ours in bountiful quantities.

Already the proprietors of more than 500 of the largest hotels in America have pledged themselves to the no-wheat movement, and many communities have inaugurated campaigns enlisting their citizens in the same cause.

Will you join that movement?

This appeal is to you personally, reader of this copy of the GEOGRAPHIC and member of the Society. If you will pledge your support to the United States Government and to our Allies in this crisis by eliminating wheat flour from your menu, your pledge and that of 650,000 other members of the Society will mean not merely that 3,000,000 loyal Americans will consecrate themselves to the saving of wheat for the next few months, but your influence will be felt and will be reflected in the attitude and actions of millions of other Americans.

This personal sacrifice—if sacrifice it be called—will not end with the saving of wheat. Another large and potent purpose will be achieved. The daily consciousness that you are aiding in the noblest and highest cause of modern times will bring to you an hourly renewal of determination that *America and her Allies must win the war.*

The hour and the occasion are at hand!

Do you take the pledge?

WHAT IS IT TO BE AN AMERICAN?*

By Franklin K. Lane

Secretary of the Interior

WE ARE not gathered to speak bitterly of others or to speak boastfully of ourselves. We have gathered to talk together as to the future of America and how it can be made a more nearly perfect nation.

We see clearly now what we have not so clearly seen before, that a democracy must have a self-protecting sense as well as a creative spirit.

We have lived in the full expression of the most liberal and idealistic political philosophy. There has been nothing of paternalism in our government. We have conceived it to be our high privilege to open this continent to those who came seeking the advantages and the beauties of a new land, in which the individual mind and heart could have free and full development.

The Statue of Liberty Enlightening the World at the main gateway of our country has been symbolic of our national attitude. We have believed, and we still believe, that liberty contains a magic healing power for many of the woes of man; that if we can turn its rays upon those troubles which have caused bitterness between peoples the world will be made sweeter, safer, and saner.

But in the ecstasy of our enthusiasm over the discovery of this curative agent which we had thought a panacea, we have overlooked our own responsibility. We have thought that it was enough to say, "This is a land of freedom and equal opportunity," without teaching what these terms meant. "Let us keep our hands off; let each man go his own way; let all things be thought, said, and done which each may choose to think or say or do, and sooner or later, by the conflict of minds and acts, truth will prevail." This has been our attitude, and it is one that in the long run is right.

AMERICANS OF NATIVE LINEAGE HAVE A GREAT DUTY

It is only in emergencies, such as that at present, when we realize that this attitude of *laissez faire*, of a high indifference or of a supreme faith, is a reason for self-reproach. The native Americans, those men into whom the traditions of liberty have been sunk by experience of generations, are primarily responsible

* An address delivered before an educational conference in Washington, D. C.

for whatever indifference has been shown by this nation in the education and enlightenment of those whom they have invited to these shores.

If we are to have a nation that has but one conception of national purpose, we must have that conception in our own souls in the first instance, and then we must enlighten those who come here as to what that conception is. The suppression of wrong-doing is the work of the State after the act. Courts and jails are, after all, but poor protections to a community. As a nation, we are looking for curatives, when we should long since have been looking for preventives. Modern medicine is devoting itself now not so much to the cure of ills as to their prevention. Modern statesmanship should follow the same course.

The greatest disappointment of the year has been the downfall of Russia. And yet downfall is not the precise word that should be used. The crumpling of Russia is perhaps a better expression, for I cannot believe that Russia is destroyed, and that that great nation of a hundred and eighty million people, with 7,000 miles of straightaway territory, can be crushed out of existence by the iron heel of the Kaiser, like some stray beetle. A race that is so near to its beginning cannot be so near to its end. There will be another Russia some day—a wiser, a more intelligent, a better educated, a more intensely national Russia.

The truth as we now see it is that Russia was not a nation. She had been long held together by the fear of the enemy on her western border and by the domination of a ruling class.

RUSSIA LIKE A CHILD REACHING FOR A BUTTERFLY

She had a love of freedom, but she had no knowledge of what freedom is. Her revolution, from the orderly overthrow of the Czar to the anarchy of Lenine, has been a simple and a natural process, because what she wanted was not the kind of independence, liberty, and freedom of which we know and which we cherish. It was not political power that her people sought and through which they might express themselves. Within six months after their revolution came they had degenerated into a mob who believed that liberty meant nothing less than the extreme of individualism, without a common love for anything excepting a desire to make some material gain at the expense of those who had land and lived in luxury.

Russia was like a child that reached out of the window after the butterfly, and reached so far that it fell to the ground and was crushed. She abandoned orderly processes within her own country and abandoned her allies on the outside.

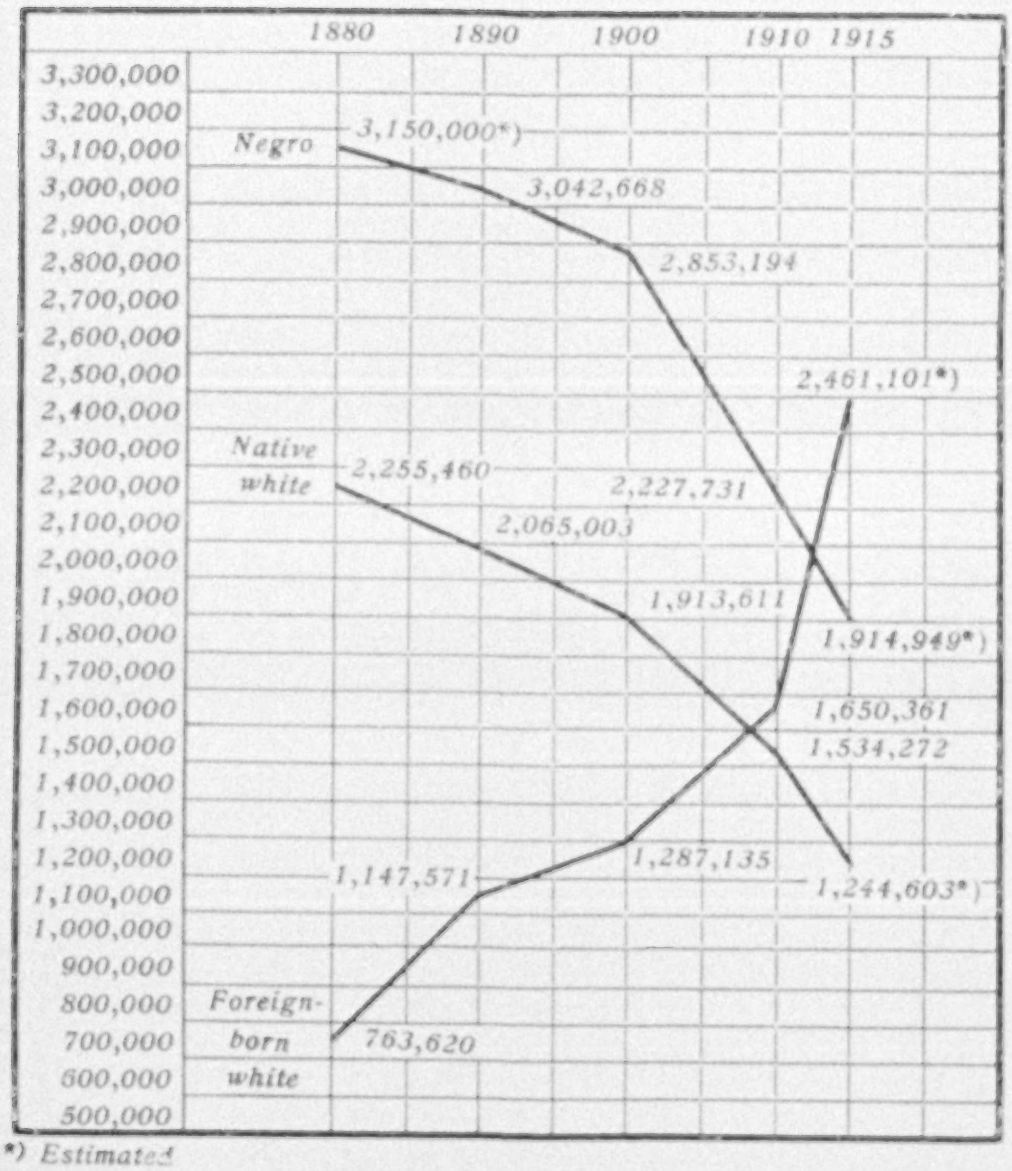
Because she was young, she did not realize that it takes time and a common purpose to make a nation, and she threw her present chance of nationality away. She resigned herself to the control of a group who believed that there was but one thing in the world worth struggling for, and that was the establishment of a new economic order, and this group undertook to compel that order by methods as ruthless as those that have filled Siberian prisons. Russia broke when her constitutional convention was dissolved by force.

RUSSIA'S UNPRECEDENTED SUFFERINGS

Russia was broken because her people did not know that political strength is a condition precedent to economic or social reform.

Russia was sick of war, and it is no wonder. She had called out twenty million men. All of them did not go to the front. Many of them could not be armed. But she sent wave after wave through Galicia and through Poland and through East Prussia, until six million Russians lay dead. Then her spirit broke. The word went out that a new day had dawned, a day in which justice would be done—that the land was to be free. The army resolved itself into its individual units, turned its back upon the front, and each individual went in search of that piece of land which should be his and which meant to him liberty.

Now what is the meaning of this to us? You say that Russia was the victim of German propaganda, and that, through the hundreds of thousands of



*) Estimated

CHART SHOWING THE RAPID SCALE AT WHICH OUR FOREIGN-BORN ILLITERATES HAVE BEEN INCREASING WHILE OUR NATIVE-BORN ILLITERATES HAVE BEEN DECREASING

Illiteracy among both the native white and negro population in the United States has been decreasing with gratifying rapidity for 35 years, but the number of foreign-born illiterates has been increasing alarmingly, especially from 1910 to 1915.

German and Austrian prisoners, the control of Russian industries, the sympathy of the Russian property-owning class, through the insidious and devious means of suggestion now being so clearly revealed, there came Russia's break-up. This may have been true superficially, but not fundamentally.

The cause of the Russian disaster, the reason that she has deserted that eastern front and has thrown the whole burden of supporting civilization upon us in the West, is the ignorance of the Russian people, 80 per cent of whom cannot read or write, none of whom, practically, had ever participated in the affairs of their own country. They did not know Russia as a nation. They had followed their leaders. They did not know the significance of Russia's position in the world.

They did not understand what it meant to have a republican form of government, through which, by their own intelligence, energy, and aspiration, they could give Russia whatever form of life they desired she should have.

OUT OF IGNORANCE HAS COME RUSSIA'S IGNOMINY

Russia was the victim of the ignorance of her people, and out of her ignorance has come her ignominy. Her people were lovable, charitable, kindly; they had the sense of neighborliness, but not the sense of nationality. The Czar was the head of the common church, and the Czar was the leader of the people. When he fell they collapsed, because they did not have the power to visualize any other leadership.

If they had had a Washington he might have saved them, though I doubt it; for behind a Washington there must be a people who have a sense of coalescence and a sense of conservatism which keeps them from destroying themselves while attempting to make themselves.

If America is not to be Russianized—and there is no fear of that—we must put into our own hearts a truer appreciation of the things that we believe Amer-

Photograph from U. S. Bureau of Education

THE ABLEST EDUCATORS OF THE COUNTRY ARE NOW ENGAGED IN DEVISING THE QUICKEST AND EASIEST METHODS OF TEACHING THE IMMIGRANT THE LANGUAGE OF THE COUNTRY OF HIS ADOPTION

"The native Americans are primarily responsible for whatever indifference has been shown by this nation in the education and enlightenment of those whom we have invited to these shores."

ica to represent; and when we say represent we imply that we are not the exclusive possessors of Americanism. There are men in Poland, in Russia, in Spain, and in all the countries of Europe, in Germany herself, who represent the spirit of Americanism, which is, in a word, that each man shall have his chance.

What is it to be American? We say that it is to love the Stars and Stripes. But a flag is no more than a symbol. It represents hopes and fears, struggles and achievements, something done and something yet to be done.

THE REAL STORY OF AMERICA

The story of America is not to be told in the landing of the Pilgrim fathers, the fights with the Indians, Bunker Hill and Yorktown, Gettysburg and Appomattox, Santiago and Manila; nor is the story told in the advance of the pioneer from the Atlantic to the Pacific, in the building of great railroads and the conquering of the wilderness, in the searching of the mountains and the establishing of great industries, in the coming of the immigrant, or in the philosophy of Emerson

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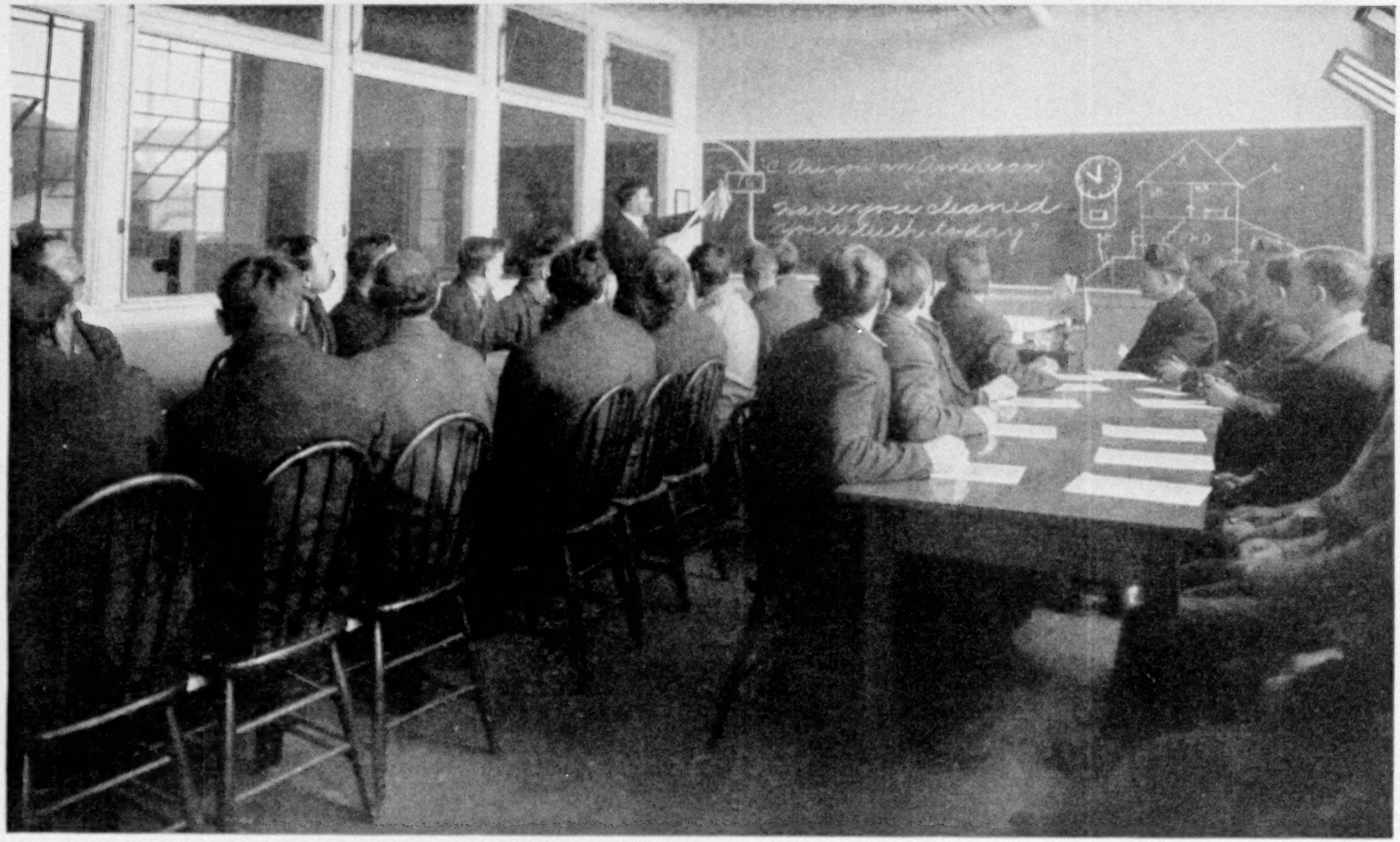

Photograph from U. S. Bureau of Education

TEACHING ENGLISH, SANITATION, AND HYGIENE TO A CLASS OF NEW AMERICANS AND FUTURE AMERICAN CITIZENS

Five and a half million persons more than ten years of age in the United States are unable to read or write in any language. There were 1,650,000 foreign-born illiterates in 1910. Five years later that number had increased to 2,461,000.

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Photograph from U. S. Bureau of Education

FORTY-FOUR NATIONALITIES MERGED INTO ONE THROUGH EDUCATION

Here is a class of happy Americans. Nine months before, they knew no common language and could not appreciate or profit by the opportunities offered them in free America. Today they can speak the common language of the country and are, therefore, equipped with one of the first essentials of good citizenship.

and of James, or the poetry of Whitman and Poe, in the inventions of Whitney and Edison—not even in the lives of our great leaders.

All these are expressions of the American spirit of adventure, of purposeful searching after the thing that is better. It is an expression of a divine dissatisfaction. It may be that this nation, like all others, will come to a period of decline. We cannot expect to live forever. But if we do come to such a period, it will be because we rest content.

We are trying a great experiment in the United States. Can we gather together people of different races, creeds, conditions, and aspirations who can be merged into one? If we cannot do this, we will fail; indeed, we will have already failed.

MAKING AMERICA THE GREATEST OF NATIONS

If we do this we will produce the greatest of all nations, and a new race that will long hold a compelling place in the world. It is well, therefore, that we come together at such times of stress as this, and we should have come together long since, and put our heads to the problem as to what are the initial steps in bringing about that harmony within our country which will give it meaning, purpose, and cohesion.

We should not be moved to this by fear. There is nothing to fear. Our wars have been fought by men of foreign birth—Irishmen, and Germans, and Swedes, and Scotchmen. We see their names every day in the list of those who are dead on the battlefields of France.

There is no such thing as an American race, excepting the Indian. We are fashioning a new people. We are doing the unprecedented thing in saying that Slav, Teuton, Celt, and the other races that make up the civilized world are capable of being blended here, and we say this upon the theory that blood alone does not control the destiny of man; that out of his environment, his education, the food that he eats, the neighbors that he has, the work that he does, there can be a formed and realized spirit, an ideal which will master his blood. In this sense we are all internationalists.

SOME UNPLEASANT DISCOVERIES

Now there are several things which we have come upon recently which seem to be discoveries to those of us who have not been wise.

The first is that we have a great body of our own people, five and a half millions, who cannot read or write the language of this country. That language is English. And these are not all of foreign birth. A million and a half are native born.

The second is that we are drafting into our army men who cannot understand the orders that are given them to read.

The third is that our man power is deficient because our education is deficient.

The fourth is that we, ourselves, have failed to see America through the eyes of those who have come to us. We have failed to realize why it was that they came here and what they sought. We have failed to understand their definition of liberty.

To be an American is not to be the embodiment of conceit as to all things that are fundamental in America, or to be satisfied with things as they are, or to let things drift.

We are taking a leaf out of Germany's book in many ways these days. Our ways of war must conform to her processes of destroying human life. She has made herself a composite, compact, purposeful nation by methods of education as well as by authority. We can make ourselves a composite, purposeful nation and impose no authority, other than the compelling influence of affection, sympathy, understanding, and education.

THE RESPONSIBILITY OF THE HOUR

Out of this conference should come not a determination to make more hard or difficult the way of those who do not speak or read our tongue, but a determination to deal in a catholic and sympathetic spirit with those who can be led to follow in the way of this nation, and as to those others who cannot, other procedure must be applied. The keynote of this conference is "our responsibility."

Photograph from U. S. Bureau of Education

PUPILS "PUNCH THE CLOCK" AT THIS EFFICIENT AMERICAN SCHOOL FOR FOREIGN-BORN LABORERS AND MECHANICS

Each pupil has a card, and his school attendance record is kept with the same accuracy that his "time" is kept in the factory. This system of recording the hours spent by each man in the class-room is said to have increased the efficiency of the educational institution 100 per cent.

It is now a year since we entered into this war, and our men are standing shoulder to shoulder with Frenchmen on their right and Englishmen on their left, holding the line that is to save civilization. The war is coming nearer and nearer to us each day. Each morning we turn with anxious and with proud eyes to read the list of our own heroes who have made the supreme sacrifice.

In a few days more this list will swell from a few short inches into continuing columns and pages. Then we will first clearly see the horror of this war. And then there will surge through our souls a passion of indignation and outrage that will close our ears to talk of peace and fix our will to win.

WHERE STREAMS RUN RED WITH BLOOD

For now almost four years we have been looking afar off at a series of unprecedented battles, in every one of which more men were killed than all the joint participants in either Waterloo or Gettysburg. There is hardly a stream in northeastern France, hardly a village, that has not been given a permanent name in history as the center of a great battle.

For many days now the Germans have been advancing upon Amiens, another of the historic cathedral towns of France. This time the Kaiser himself has announced to the world that he would be present and in supreme command. There has been no such battle before. Let us hope there may never be such another.

The determination of the Germans has been shown in their unprecedented recklessness of life. Amiens, the great railroad center leading from Calais to Paris, must be seized. There never has been greater courage shown by men than the Germans have shown in this advance.

XUM

The men march in solid ranks and are mowed down by rapid-fire guns. As the front line falls the rear advances. As it falls, too, another line appears to take its place. And so by increments of death the Kaiser wins his way.

THE WORLD'S GREATEST BATTLE, BUT NOT THE LAST

This is the world's greatest battle. More men are involved, more cannon—they say there is a gun for every 40 feet along the western front—more airplanes, more tanks, more lethal weapons of every kind, more poisonous gases, and more of hell is seen upon that 60-mile front than the eyes of the angels have ever looked upon before. We call it the world's greatest battle, but the last great battle of this war has not been fought and cannot be fought now.

That line may bend, but it will not break. Remember, there are Scotchmen there—Scotchmen from Glasgow and from Edinburgh and from the far islands of the north, Scotchmen who never surrender; and Englishmen from Liverpool and Manchester and London, from the Soft Lake country and from Surrey; and Irishmen from Killarney, the gallant Irish, who are fighting that there may be an Ireland saved to which will come home rule; and men from Australia and New Zealand; Canadians, who love war no more than we do, but can make it just as well. There are Frenchmen there, the Frenchmen of Verdun. Need I say more? No more can be said.

MORE TO LIVE AND DIE FOR THAN EVER ARMIES HAD BEFORE

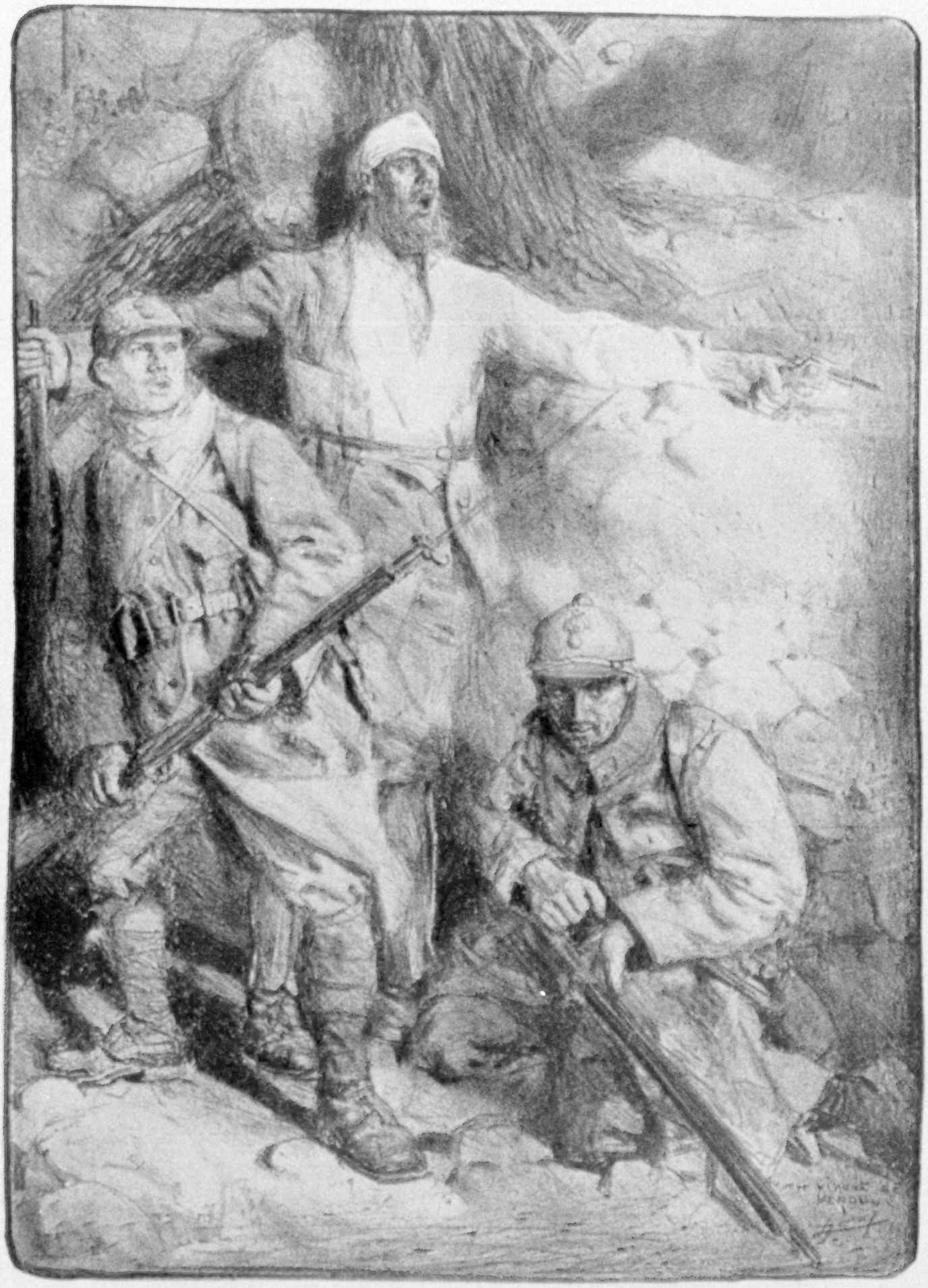
Those men do not yield. They have not fought for nearly four years that they may crumple up now. It is a thin line that holds the Kaiser back, but it is a line in which there is more of spirit and more of resolution than in any line the world has seen, because it has more to live for and more to die for than any other group of men ever gathered together; and into this thin line we are weaving our men in khaki. These are but an assurance. More and still more are to follow, until that thin line is made a thick line.

Von Hindenburg said after the first week of the offensive that the first act was over. It is never the first act that tells the story. The climax comes in the closing scene, and in that closing scene America will play her part; and it will be a noble part. It is my solemn conviction that when success comes to the Allied armies, under General Foch, it will come because of what we do, because of our men in the field, and the spirit and sacrifice of our men and women and our boys and girls at home.

A NEW SPIRIT IN AMERICA

America has never sought to be a world power. She does not now. But America has nothing to live for if Germany becomes the one dominant power of the world. And against that possible day your boys and my boy must give their lives, their ambitions, their dreams, if need be.

And we who are not permitted to fight, what shall be our part? Let it be our resolution that when our sons return they shall find a new spirit in America, a deeper insight into the problems of a striving people, a stronger, firmer, more positive and purposeful sense of nationality. We shall make America better worth while to Americans and of higher service to the world.



From the drawing by the eminent French artist, Lucien Jonas

THE RAMPART OF VERDUN

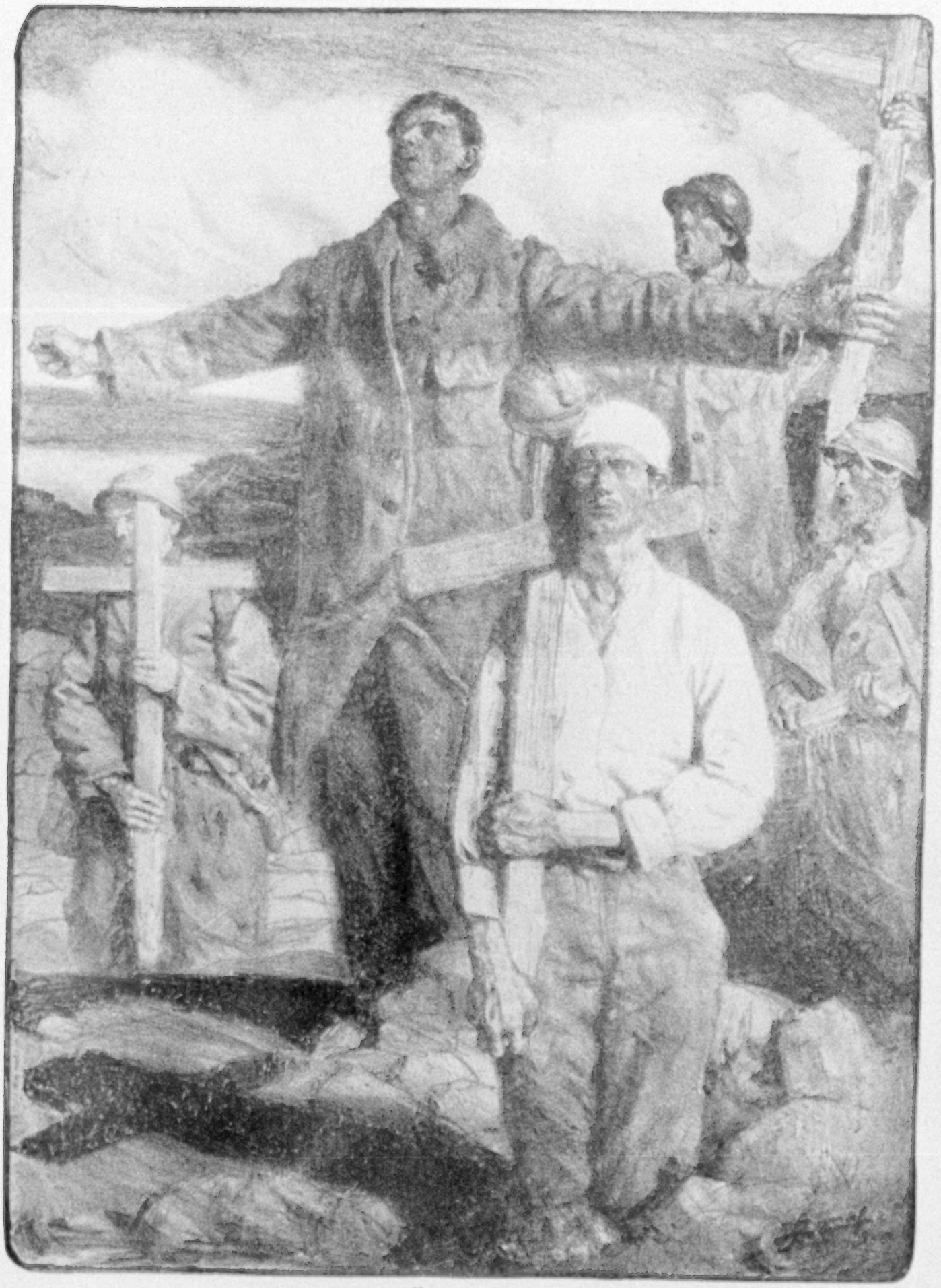
Those who held the pass at Thermopylæ; the Old Guard, which died but never surrendered; Horatius and his comrades at the bridge—the deeds of these and of many other heroes of the past quicken the pulse of youth. First among the immortals of history now stand the defenders of Verdun, who said: "They shall not pass."

XUM

From the drawing by the eminent French artist, Lucien Jonas

ONE VOLUNTEER!

To carry an important message into the very jaws of death one man is needed. The remnant of a shattered company spring to attention, thus voicing the spirit of France. Which of these shall be chosen that he may give his life for his country?



From the drawing by the eminent French artist, Lucien Jonas

THE DEAD ARISEN

A dramatic conception of the fields of Flanders. The unshrouded slain of liberty-loving nations rise in protest against the inhuman invaders. The artist calls his drawing "Debout, Les Morts!"

XUM

FORMING NEW FASHIONS IN FOOD

The Bearing of Taste on One of Our Great Food Economies, the Dried Vegetable, Which Is Developing Into a Big War Industry

By David Fairchild

Agricultural Explorer in Charge of Foreign Seed and Plant Introduction, U. S. Department of Agriculture

WHEN you brand a food as not fit to eat, how do you arrive at that conclusion? If it is a food that you have never eaten before, how do you know that you are right? If it is one with which you are familiar, how do you know that the difficulty does not lie in the manner of its preparation?

It is a complicated question, this seemingly simple one of taste, and it involves the whole history of the race; and, strangely enough, it is one with which our big educational institutions have concerned themselves very little. It has required great wars to shake people's confidence in their own fixed opinions on this matter of taste in foods.

These habitudes, these tastes in foods, have been great stumbling blocks in the problem of feeding our Allies. They could not, to begin with, use our corn-meal, because they had never used it and were not accustomed to making it into corn-bread. With Madagascar and Cochin China producing great quantities of rice, the resistance to its use in certain sections of these countries has seriously interfered with the full utilization of this source of food among the Allies.

OUR LIMITED RANGE OF FOODS

It appears to be instinctive to ridicule a new flavor of any kind, especially if it is widely different from those to which one is accustomed. During the Civil War we learned to can fruits and vegetables. Does any one imagine that there were not many thousands who scorned to touch the canned stuff? It has a different taste from the fresh, and to condemn it as not fit to eat was the fashionable and the easy thing to do.

But how have we become accustomed to certain flavored foods and why are we unfamiliar with others? We eat three meals a day and in the course of our lives we sit down to the table, say, 75,000 times, and yet the range of foods with which we become familiar we can most of us count on the fingers of our hands. Why is it?

The cook-books are filled with recipes, and they are ponderous volumes, too, but they are recipes for the cooking of a few staple foods in an endless variety of ways.

The importance of possessing a wide taste in foods has never appealed to us as strongly as it should have, although Americans have made greater progress in this field of dietetics than most other peoples. We have not seen any particular advantage in it, and we have spent more money in the education of our children in art and music than in their instruction in the nutritive value of different foods.

WHY DO WE EAT VEGETABLES?

But food has come to have a new meaning, and one of the lines which this war has made plain is the dried vegetable, an old product which now has a new interest.

Why do we eat vegetables at all? They are expensive to transport on our railways, they are bulky things to handle in our kitchens, they rot easily and fill our garbage cans, and many of them require a great deal of labor to grow.

Our showmen have exhibited to mil-

ONE OF DR. MC COLLUM'S RATS, RAISED ON A PERFECTLY SATISFACTORY DIET

Note the brightness of its eyes, the smoothness of its ears, and the general appearance of sleekness of its hairy coat. This is one of the 1,500 rats which compose the laboratory of Dr. E. V. McCollum at the School of Hygiene and Public Health of Johns Hopkins University, where the dietary values of our common foods are being studied and where in particular the biological value of the different proteins which we eat is tested as to its fitness to be employed by our bodies in the building up of our body cells. It is through the researches of Dr. McCollum that the rôle of the unidentified dietary essentials, "fat soluble A" and "water soluble B," has been worked out.

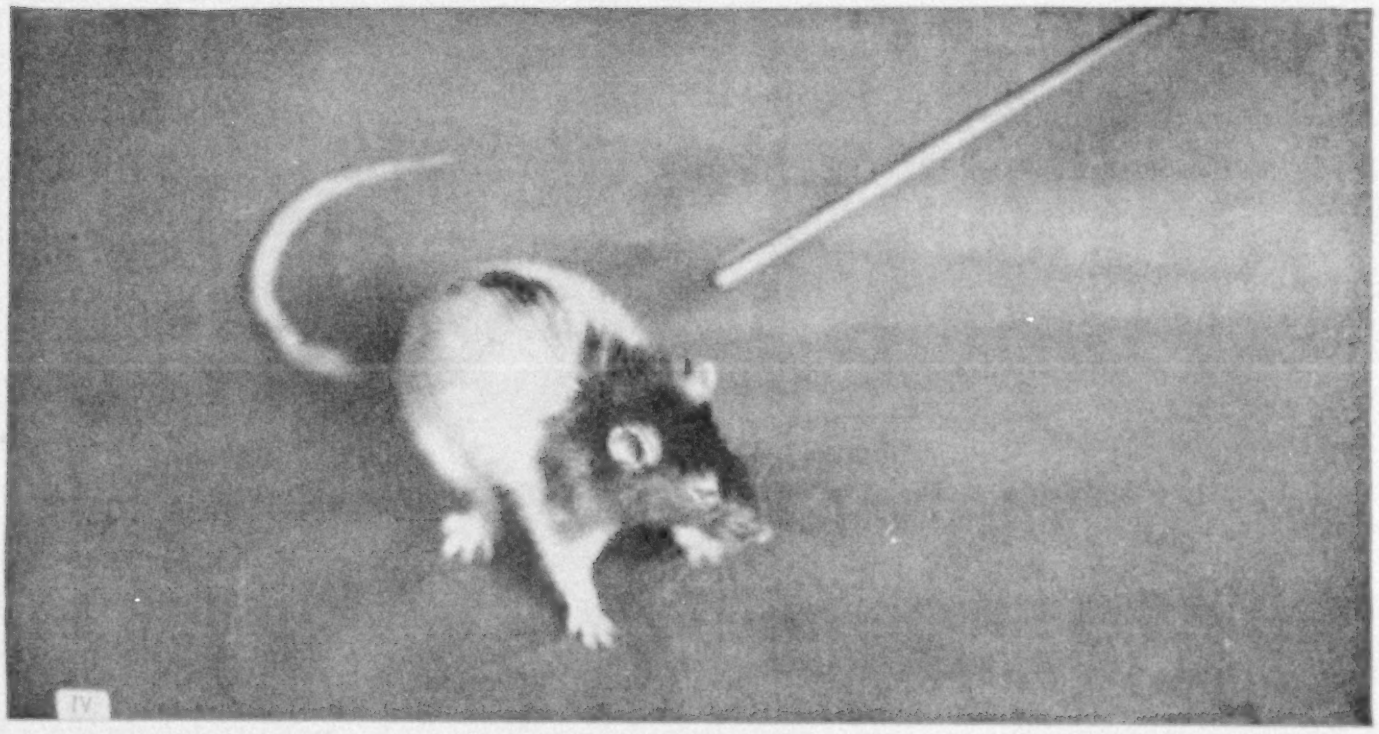
lions of Americans giants and dwarfs, fat ladies and living skeletons, but far more inspiring and educational would be the exhibition of some of those fine physical specimens of humanity from southern Italy who have lived for generations without eggs, without milk or cheese, and with meat only a few times a year. These Italian peasants, according to Lusk, have built up these strong working bodies on the simple diet of corn-meal, beans, olive oil, and the leaves of the cabbage and the beet, with garlic and Spanish peppers for flavoring.

It is these Italian peasants who for years have done the heavy construction work of our railroads, getting rich because they are willing to live on their cheap foods, while side by side with them work the Southern darkies, who have demanded meat twice a day and paid any price for it.

McCollum has shown through his rat experiments that the matter is not so mysterious as it was thought to be. The secret lay in the use of green vegetables. Rats will starve and men, too, on Indian corn alone. They will do better, although not really well, on corn and olive oil; but on corn and oil, with the addition of greens of some kind, they thrive and reproduce.

TWO NEWLY DISCOVERED FOOD ESSENTIALS

The human machine is, after all, a simple one in many ways and can take its fuel (energy-yielding food) as well from cheap as from expensive foods, but it must have all of the different kinds or it runs down quickly. Starches, fats, proteins, minerals, and water are the five great food groups for which we are accustomed to planning in our diets; but until recently we have not known about



RAT WITH CHARACTERISTIC SORE EYES, CAUSED BY A LACK IN ITS DIET OF THE "FAT SOLUBLE A"

This rat shows the effects of a diet which lacked the unidentified essential, "fat soluble A," which is abundant in butter fat, but is not found in any of the oils or fats derived directly from plants. It is present, however, in relatively small amounts in the green leaves of vegetables. Large amounts of green vegetables, therefore, particularly leafy vegetables, can be made to take the place of butter fat to a certain extent.

two others which are essential to health. They are called respectively by research men the "fat soluble A" and the "water soluble B."

The "fat soluble A" is present in the fat of milk, the butter fat which forms the cream and butter itself, but, curiously enough, is not present in the vegetable oils nor commonly in the cereals or foods coming from the seeds of plants. It is, however, a characteristic of green vegetables and is particularly abundant in the green leaves of plants.

The "water soluble B," on the other hand, does occur in cereals, particularly in their outer layers, and in green vegetables, as well as in a very large number of other foods.

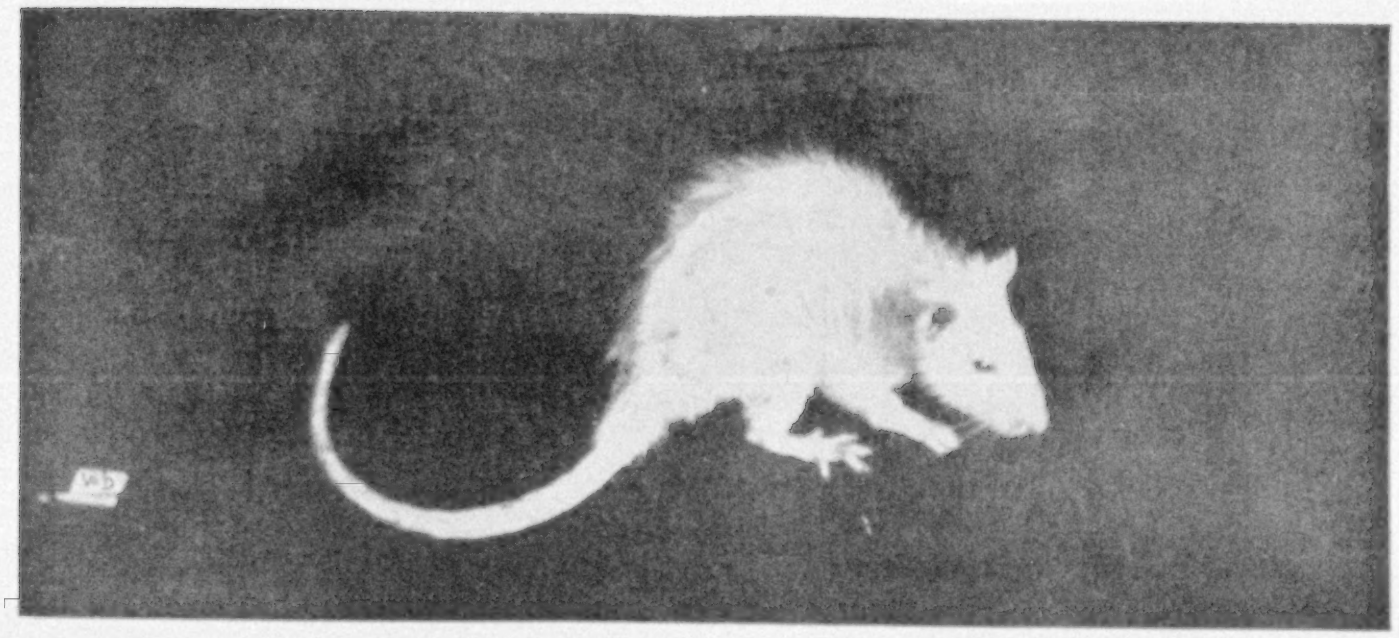
The South Italian peasants build up their strong, powerful bodies, then, from the proteins and starches of their corn polenta and from their green vegetables. They get their fats from the olive oil, and their "fat soluble A" is taken from the green vegetables. Their "water soluble B" is obtained from both the corn and vegetables, for it is present in both.

The old doctrines of "strength-giving foods" must be analyzed from the new standpoint of the presence of these two newly discovered and not yet named substances, called by some the "fat soluble unknown"—substances apparently as essential to us as salt, but whose absence unfortunately we cannot detect by taste as we can the absence of salt.

THE ANALOGY OF FRESH VEGETABLES AND FRESH CEREALS

It is plain, therefore, that we must have vegetables; the trouble is that we like our vegetables fresh, and in the large cities it is becoming very difficult to have them really fresh at a reasonable price, especially in winter.

There was a time when we felt the same way about our cereal foods. We wanted them freshly ground every few days. There are men living who remember when we ate our corn-meal freshly ground, taking a bag of corn to the little mill and bringing back a bag of meal. These people declare, and I have no doubt they are correct, that there was a flavor to this meal which our modern milled product does not possess.



A RAT WHOSE DIET CONSISTED TOO LARGELY OF CEREALS AND OF FAT PORK

It was brought to this condition, approaching starvation, by being restricted to the following list of foods: wheat flour (bolted), corn meal (made of corn from which the germ was removed), rice, starch, corn grits, molasses, sugar, pork fat, sweet-potatoes, cabbage, and salt. There was too little of the leaf of the cabbage in the diet to "protect" the animal, as 95 per cent of it was derived from the endosperm (inner part) of seeds and pork fat. It is this type of diet which is widely used in regions where pellagra is prevalent.

There are some countries today where every morning the housewife roasts the coffee beans which she grinds for the breakfast coffee. If you try to convince any cook who has learned this way of making coffee that the store-ground coffee is just as good she will dispute your claim to the bitter end.

I once visited an epicure who had installed a little mill on his place, and in it every evening he ground selected seed wheat of the best quality for his breakfast cereal the following morning, and I must say that I never ate a more delicious breakfast dish.

But one by one these attempts to keep close to ultra-fresh foods have broken down under the strain of increasing population; whether for good or ill is still an open question. It is no small comfort, however, to find that the more accurate researches of modern medicine and the experiments of dietitians have shown that our drift away from ultra-fresh foods is not imperiling the health of the human race.

OUR EXPENSIVE EPICUREAN TASTES

It is because we are accustomed to seeing lettuce on the table that we bring it 3,000 miles by train in special cars from California. It is just because we like fresh string-beans that we bring them, at $8 a crate, from the very tip of Florida in February, outdoing Lucullus, who brought his sterlets to Rome from the Danube by relays of runners.

And yet our bodies get no more food from string-beans at $8 a crate than they do from dried ones at a fraction of the cost, according to all the experience of Arctic explorers. The food values, according to McCollum, are not changed; the mineral constituents are all there, together with the "fat soluble A," which is not found in the grains and without which young human bodies cannot grow nor old ones maintain their vigor.

Old prejudices die hard, but we are now eating some things which our forefathers scorned or of which they had never heard. They were unfamiliar with celery and with olives. They did not dream of the grapefruit, nor the soybean, nor the wild rice of Minnesota, nor the kaffir corn, nor the cassava melon, nor the avocado, nor the banana, nor the Chinese cabbage—all these and scores more have come into our dietary within the last generation, not to mention the arrival of the whole canned fruit and vege-

TWO RATS BROUGHT TO THE VERGE OF BERI-BERI AND ONE THEN CURED THROUGH THE USE OF DRIED CELERY LEAVES

The smaller rat was fed on a diet low in the "water soluble B," and was near having beri-beri. The large one was brought to the same condition and was then given 10 per cent of dried celery leaves. He gained weight with phenomenal rapidity and quickly became a fine-looking specimen, according to Dr. McCollum.

table galaxy, with its bewildering variety of flavors and colors.

THE AMERICAN'S HABITUDES ARE CHANGING

With every one saying it can't be done, the American *is* changing his habitudes, his tastes in foods.

And now the supreme moment has come to put this characteristic of the American civilization to account.

When once we learn to like dried vegetables—and if they are properly dried and properly cooked they taste so nearly like the fresh ones as to be almost indistinguishable—there will be unlocked vast storehouses of food in the sweet-potato areas of the South and equally vast supplies of Irish potatoes in the North, now threatened with complete or partial loss.

It is extremely difficult to predict the course of events in any change of human habit. Could Sir John Hawkins have dreamed, when he introduced a Peruvian tuber as a curiosity into Ireland, that his great-great-great grandchild (if he has one) would see 155,000,000 bushels of potatoes produced in that island alone?

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When King John of France was being taken to England after the battle of Poitiers and one of the principal items of his expenditure was for sugar, one of the kingly luxuries of the day, could he possibly have imagined that the time would come when a descendant of a West African slave, in a continent yet undiscovered, would remark in the language of his captors, "It just seems like somebody was dead in the house to have no sugar." These are consequences of food habits.

HOW THE DRIED VEGETABLE HABIT WOULD CHANGE WORLD AGRICULTURE

To get into the habit of using dried vegetables would result in a tremendous change in the agriculture of the world. It would create demands for the products of plants which are now grown in comparatively restricted areas, and these areas would extend, just as the areas of the sugar-beet, which in Napoleon's time were small, have grown until they cover vast regions of the globe—675,000 acres in America alone.

The sweet-potato is one of the plants which would be affected at once, for its limiting factor of cultivation is its poor keeping quality and the fact that it rots if exposed to a temperature below 45 degrees. It already ranks second among the vegetables grown in this country, notwithstanding its perishability.

Dried sweet-potato slices form one of the most successful of all dried vegetables, for they "come back" when soaked, retain their sweetness and flavor, and can be fried or candied in a most appetizing way. The longing of our Southern boys in France for their favorite vegetable can be easily met by the use of these dried sweet-potato slices.

Were adequate plants erected where they would be able to turn this extremely perishable food into such an imperishable one as sweet-potato flour, in a manner comparable to the great Dutch white-potato mill, which is reported to manufacture into potato flour 33,000 bushels of fresh potatoes a day, it is reasonable to predict that our 953,000 acres devoted to the crop in 1917 would expand until a much larger proportion of the millions of acres of cheap cut-over land in the South suited to its cultivation would be planted with sweet-potatoes.

THE VIRTUES OF SWEET-POTATO FLOUR

While the sweet-potato has not as much protein as the white-potato, it has much more sugar—towards the close of the storage season it has as much as 27 per cent, reckoned on the dry substance. It is richer in carbohydrates, and produces flour of such excellence that the following comments have been gathered from experienced cooks who have tried it: "It makes just as good ginger-bread as any"; "Better muffins than Graham ones"; when used with corn-meal, "Delicious griddle-cakes," "The best I have ever tasted"; in whole-wheat bread, "It gave no new flavor and saved adding so much shortening"; "In pastry we found it most satisfactory."

For almost a year, the director of the Tuskegee Institute writes, the baker of the institution has saved 200 pounds of white flour a day by the use of sweet-potato flour (one-third sweet-potato to two-thirds wheat flour), and the resulting bread has not only become the favorite among the pupils, but among the citizens of Tuskegee as well.

When one considers that the sweet-potato crop takes 15 per cent less potash fertilizer than the white-potato; that the seed is much cheaper; that there are two planting seasons possible; that the yields on poor soils with little humus are large, as high as 100 bushels—even 700 bushels are recorded; that it grows in the region of our cheapest labor, and that that labor understands its culture, and then combines these facts with the experience of those who have dried the sweet-potato and actually made a fine flour out of it, one is forced to the conclusion that only a demand for the dried sweet-potato product is necessary in order to establish the industry firmly.

THE WHITE-POTATO SITUATION

But the white-potato situation has proved in this present emergency an even greater problem than that of the sweet-potato, for the car shortage has been so great in Colorado, Michigan, and Idaho

that immense quantities could not be moved to the markets. Orders for dehydrated potatoes for the U. S. Army amounting to many thousands of tons and the hotel demands for potato flour have brought into existence large factories which are saving millions of bushels. Had these been started earlier, any considerable wastage would have been prevented.

Some of the best hotels in the country have tried the dried sliced potatoes, some of the best restaurants, some of the most fastidious people, some of the best cooks, and the general verdict is that when properly processed and properly cooked they are almost indistinguishable from the fresh product, either as mashed potato or when French-fried.

After most careful trials the army has learned how to use them successfully, and one of the largest navy cooking schools has reported most favorably on them. In food value, in appearance, and in flavor they are the equal of any but the potato fresh from the hill. But how many of us get them fresh from the hill?

Under these circumstances and in the face of hundreds of analyses and dietetic tests which have been made, is it the patriotic thing to wonder and hold back and hesitate as to whether we can learn to use dried potatoes?

THE POTATO'S GREAT NUTRITIVE VALUE

If we let the crop rot, the moral effect on the grower will be serious. Already there is much grumbling, and the farmer is not likely to plant as large an area to potatoes again next year. Inasmuch as the regular fluctuations of the potato yields in normal years is 25 per cent, the chances of a serious shortage in 1919 ought to worry us into activity and start the erection of drying plants which would act as reservoirs, so to speak, into which would go, as has been the case in Germany, that part of the potato crop which was not immediately salable.

Because of its great nutritive value, the potato, in some form, should never get beyond the reach of the poorer classes in our cities, and the acceptance of the dried potato is the way to insure this. By its adoption the perfectly logical practice would be inaugurated of reducing the bulk, so that six cars of the fresh product will make one car of the dried, before being hauled across the country to the Eastern cities.

One hundred pounds of fresh tubers yield about 16 pounds of dried slices, containing 10 per cent of water, and these, if ground into flour, take up about one-fifth as much space as the potatoes in their original state.

GERMANY'S USE OF THE WHITE-POTATO

It would be difficult to overestimate the gigantic rôle which the dehydrated potato has played for many years in Germany. Before the war, even, it is reported that more than 800,000,000 bushels were being dried each year for human and stock food. This is more than twice the average potato crop of this country.

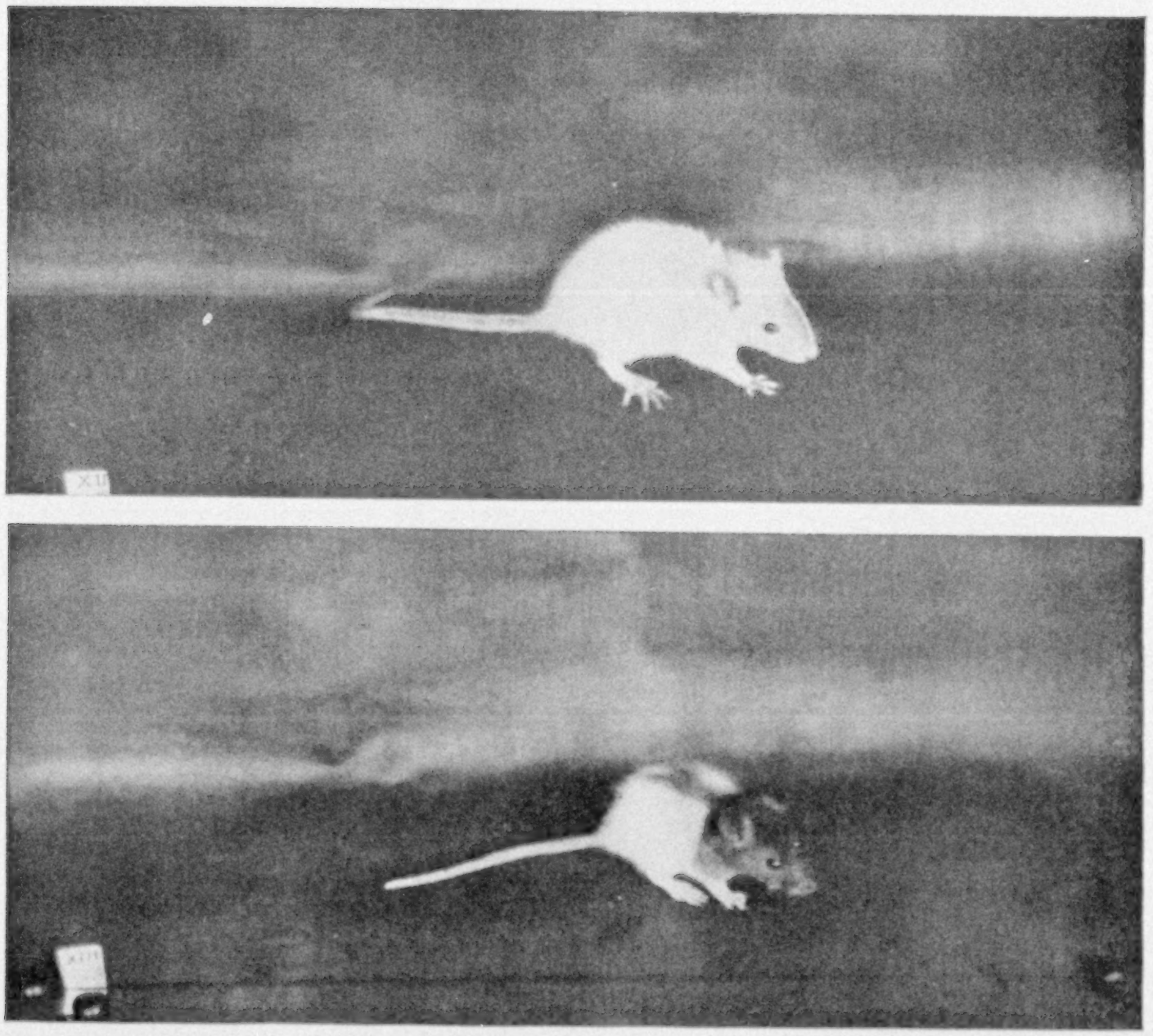
Great stocks of dried potatoes are believed to have been stored away by Germany before the war in preparation for it, and one of the first things that was done when the conflict began was to increase these factories for the making of potato flakes and potato flour. Now there are 1,350 factories devoted to potato drying alone, and practically all of the war bread used in Germany has a high proportion of potato flour in it.

Not only have the factories in Germany been increased, but the demand for potato flour has been so great that Holland has erected gigantic factories for its production.

Of course, there is no gluten in potato flour to stick it together, but the calories are there which furnish the body energy so much needed for war work. And it is important to remember that, so far as calories are concerned, an acre of potatoes will produce on the average nearly twice as much nutriment as an acre of wheat.

TWO KINDS OF POTATO FLOUR

The public should understand that there are two kinds of substances called potato flour. One is the natural potato flour, which is made by washing and slicing and cooking and then drying the potatoes and later grinding them and bolting the flour, much as wheat is bolted. This process retains all of the mineral salts.



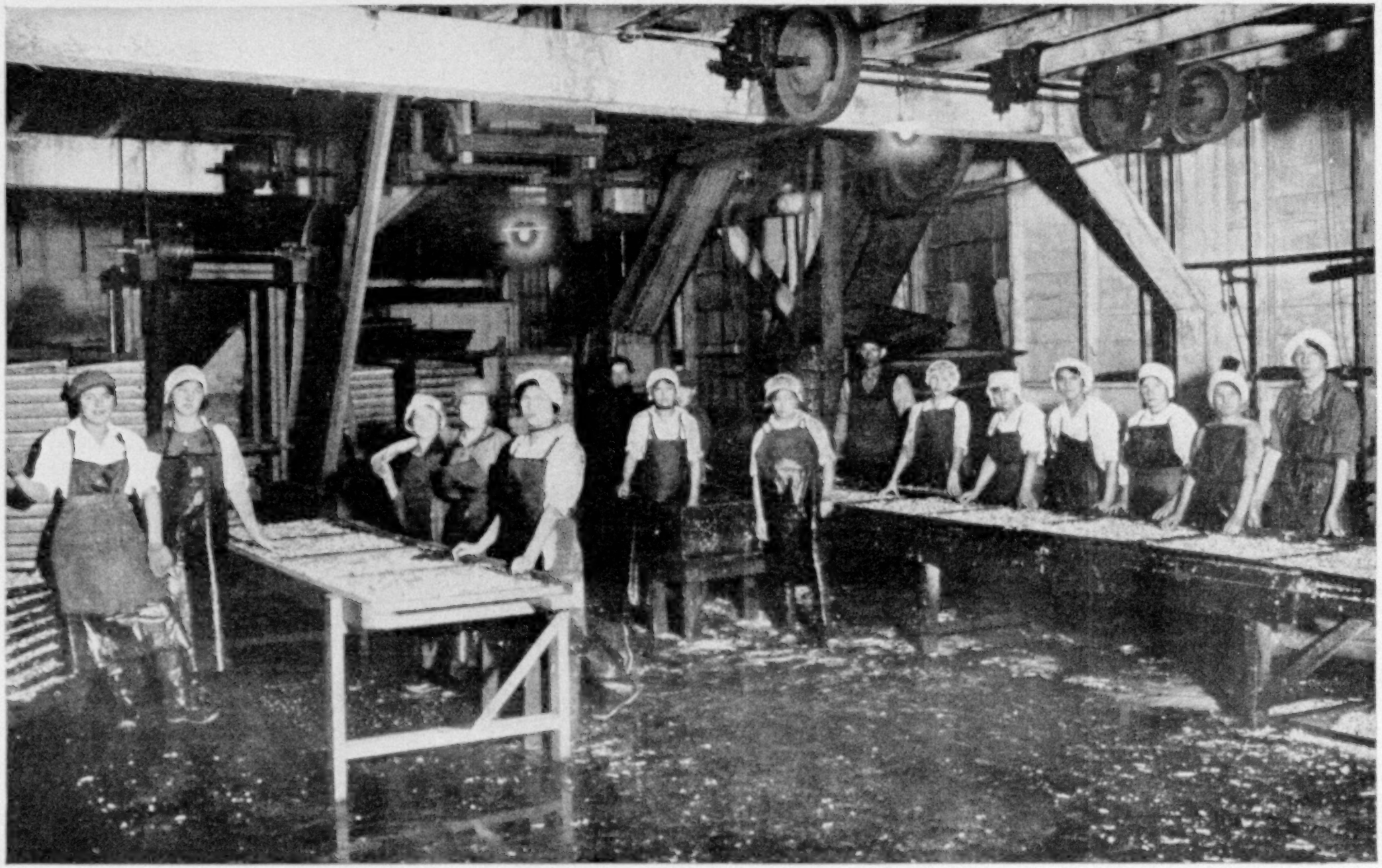
NORMAL LITTLE RAT AND STUNTED RAT

Two little rats of the same age, one normal, the other stunted by its mother's milk, which was of poor quality because of faulty diet. From the experimental cages of Dr. McCollum.

The other product is known as potato starch flour, and is made by first grinding the potatoes, pumping the pulp on a screen, which takes out the coarse fiber and skin, and then dropping this pulp into vats, where, by means of running water, all of the remaining fiber and much of the protein and mineral salts are washed out, leaving only the pure starch.

This is the starch which prior to the war was used by the cloth manufacturers for the sizing of their fabrics. Now, when wheat flour is scarce, it has come into use for the making of high-class pastries. It has not, of course, the nutritive value of the natural potato flour.

That the stabilizing of the potato crop is of the utmost importance has been recognized in Germany for many years. But in the United States the price the farmer receives varies very greatly, according as there is a surplus or a scarcity. When the potato harvest is a large one, he is apt to lose money on his crop, and, being discouraged, next year he puts in something else. If there is a shortage in that year potatoes bring exorbitant prices, and he sees big money in them, and the following year he puts in a big acreage, as do thousands of others, and perhaps the year is a good one for potatoes and the yields are 25 per cent higher, and



SCENE IN A VEGETABLE DRYING FACTORY: INSPECTING AND SPREADING TRAYS OF SLICED VEGETABLES AND LOADING KILN TRUCKS

Many tons of vegetables are daily dehydrated in this efficient Canadian plant for shipment to the British armies in France, Syria, and Mesopotamia (see also page 366)

INSPECTING TRAYS OF DRIED VEGETABLES JUST FROM THE KILNS AND FILLING TRUCKS FOR STOCK-ROOM

The concentrated food value of dehydrated vegetables was demonstrated recently in an army test, when five pounds of dried cabbage formed a ration for 428 men

again he is deceived and loses out financially.

A permanent market for potato flour in the United States would stabilize potato growing and make it less of a gamble than it is now.

THE ADVANTAGES OF THE DRIED TOMATO

But the tomato offers an even stronger argument for dried vegetables than the sweet-potato or the white-potato, when viewed from the newer standpoint of food value and car space. Fifty years ago we refused to eat the tomato because we believed it was poisonous; then we became so fond of it that we demanded it both in and out of season, even though it had to be grown thousands of miles from our markets, in the South or under glass. And for our epicurean tastes we paid exorbitant prices.

Then we learned to can this vegetable in great factories, and because we want our tomatoes stewed instead of as a sauce for macaroni or rice, we insist that the vast majority of our put-up product shall be in form for immediate use—emergency ration shape; in other words, canned without being concentrated into paste, which is the way the Italians use their tomato flavor. In this dilute form 360,000,000 cans of tomatoes are shipped over the country.

There are 2 pounds 1 ounce of tomatoes in a can, or a trifle over 18 cents' worth, and in a case of 24 cans, which sells for $4, approximately 43 cents' worth of tomatoes as picked in the field.

This not only means that we ship the tin cans in which the canned tomatoes are contained, but that we first ship the same number of tin cans from the factory where they are made to the cannery where they are filled.

We have never learned and have never had to learn, until this war's necessities forced the matter to our attention, that the tomato can be successfully sliced and dried; that it retains its characteristic flavor and aroma when so dried; that when soaked in water for four or six hours it comes back and makes a delicious sauce or soup, slightly sweeter than the canned tomato. For many of the ordinary uses of the household the dried tomato is as satisfactory as the canned product.

SAVING TONS OF TRANSPORTATION

One ton of good tomatoes, after peeling, trimming, and packing in cans, will weigh approximately 2,300 pounds when crated for shipment, whereas the same quantity, when dried and boxed, is reduced to only 200 pounds, or about one-twelfth as much. In bulk the saving depends upon whether the slices are compressed or not.

If left loose in the packages, the equivalent of ten carloads of the canned tomatoes could be packed in a single car, and when the car space required for moving the empty tin cans, block tin, and packing-case materials is considered, this number of cars is practically doubled.

Likewise, cabbage and its fermented product, sauerkraut, can be dried successfully and brought back without losing their flavor. In a trial at one of the army hospitals five pounds of dried cabbage formed a ration for 428 men.

Dried carrots, beets, peas, and string-beans are practically indistinguishable from the fresh; spinach, which is so often tasteless when canned, turnips, onions, cauliflower, Brussels sprouts, mushrooms, squash, pumpkins, and parsnips—all are successfully dried, particularly so by the newer and better-regulated power-fan drying processes which have been adapted and invented by various American drying firms.

These commercial products are more uniform and of much more attractive appearance than the home-dried products, taken as a class, for the reason mainly that they are dried more rapidly, under more carefully controlled conditions of moisture and heat; and when put into water they come back to almost, if not quite, their original dimensions and appearance.

BUT HOME CANNING MUST NOT BE DISCOURAGED

Luncheons in some of the big hotels of the country have been held to test these dried vegetables; some of the foremost women in the country have been given a chance to taste them, and there has been almost universal surprise as to their palatability and their superiority or equivalence to the canned products.

This article is written for the purpose of encouraging the consumption of dried

vegetables because they are economical, *but not for the discouragement of the home canning of such vegetables as are successfully canned*. Canned vegetables, while they will cost more, will always have the advantage of the emergency ration; they require only to be warmed, and for certain recipes they will be required.

The evident advantages of purchasing dried vegetables instead of fresh vegetables are that they will save the householder the labor of preparation in the kitchen, for they are all peeled and sliced and have only to be soaked before cooking; they will lessen the weight of her market-basket by the water that has been taken out, which varies from 50 to 85 per cent, and also by the absence of the peeling and tops; they will keep indefinitely if protected from moisture and insect contamination; they will lessen her garbage: when out of season they will cost less than the fresh and much less than the canned at any time, and they will insure for the children, at all times of the year, the "fat soluble A" and the "water soluble B," both essential to growth.

It would be fortunate if the time were soon to come when the drying of vegetables by means of drying plants of suitable size, with adequate safeguarding appliances, should be a local industry wherever vegetables are grown. The result would be a stabilizing of prices of those perishables which are so often grown at a loss because of overproduction or a faulty system of distribution.

Americans demand the best, and if the dried vegetable program is to succeed, it will be through the production and dissemination of a grade of dried food such as the world has never seen before. Such quality has already been produced, and with the development of the industry discoveries are to be expected which will place this new material permanently in the grocery stores of the country.

HOME DRYING IS IMPORTANT

The above statements should not be interpreted, however, as discouraging home drying.

Their reduced bulk and their excellent keeping quality should make it possible for thousands of women experts to carry on a paying business in their own special brands of a superior quality of dried vegetables, standardizing their product and making their own reputation by doing so. Once the demand for dried vegetables is general, the commercial field is open just as it is now to home-canned products.

What is needed now, however, is concerted effort to induce the American public to use dried vegetables, really to want them, and, having once tried them, continue to use them. The demand will bring the product, and this product may be expected to improve in quality and attractiveness as the art develops, just as has been the case with every other food which American ingenuity has developed.

When fresh vegetables go too high for your pocket-book, buy the dehydrated ones, which have the same food value and are more convenient, and as time goes on the demand so created for a product which is so preëminently economical and good will become a regular part of our diet and we will not any more question the dried vegetable than we do today the canned vegetables, or the dried apricot, fig, apple, prune, or raisin. It should be remembered that we produce nearly $35,000,000 worth of dried fruits every year, and consume them in the form of apple sauce, apple pies, stewed prunes, stewed apricots, and stewed peaches.

There is yet another factor which we should consider. With the shortage of labor skilled in the handling of dairy herds, the rise in the price of grain, and the cost of dairy-product distribution, it may be necessary to cut down on the family milk supply. This economy, however, eliminates not only one of the cheapest sources of proteins, but reduces for children, especially, the "fat soluble A," which is essential to growth. Should the milk supply be curtailed the only substitute is to be found in the leafy vegetables, and to make up the deficiency we would require, according to McCollum, about 30 per cent dry weight of our food to be composed of these.

Unless these vegetables are available in dried form in the months of scarcity, some of us are going to suffer. The

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Photograph from Dominion Products Company

A BIN OF MIXED DRIED VEGETABLES—CARROTS, TURNIPS, ONIONS, POTATOES, PEAS, AND BEANS—MADE ACCORDING TO STANDARD BRITISH SPECIFICATIONS FOR THE BRITISH ARMY

preparation for this emergency should be made this summer and autumn when vegetables, especially the leafy ones, like cabbage, spinach, celery, can be had by the ton for what we have to pay for a case of canned vegetables in the late winter months.

CARE REQUIRED IN THE COOKING OF DRIED VEGETABLES

There is, no doubt, much to be learned in the kitchen about the handling of dried products. They are not to be handled as though they were fresh vegetables, and they require a different treatment from the vegetables which have stood for months in the water of a tin can. The moisture has been almost entirely taken out of them, and it requires time for this moisture to be reabsorbed. This process takes from six to twenty-four hours, and cannot well be hurried.

Then the cooking should be slowly done, approximating in this respect the process of the fireless cooker. In the drying operation some of the flavor is lost, but in many vegetables there is a surplus of flavor anyway. The cabbage and cauliflower, the turnip and carrot, the tomato and onion, are strong enough to lose a little of their flavor without detriment. But in cooking, the vessels in which the dried vegetables are prepared should be kept closed and as little steam as possible allowed to escape.

The tendency to be guarded against is that of having the vegetable too concentrated—adding too little water or allowing too much water to escape in the form of steam.

The most serious difficulty which attends the introduction of the dried vegetable is not different from that which attends the introduction of any new food. The danger is that the first attempt at cooking may be unsuccessful, and this failure be taken as a fair trial and the product condemned as not fit to eat, when in reality the fault lies in its preparation.

BUT DON'T SHIFT FROM CANNING

The impression has been made, and this is unfortunate, that the proposal to use dried products means that we are asked to shift immediately and wholly from the fresh and canned vegetable diet which we now have to one composed entirely of dried vegetables. This is impracticable. What is wanted is the cooperation of the households of the country in a country-wide experiment in the utilization of these foods.

What the future holds for all of us no one can tell. What economies we may have to make are hidden by the impenetrable veil. We must send our Allies the concentrated foods. We are shifting to corn in order to send them wheat. The wholesale use of dried vegetables and of potato flour will assist us to do this. The production of thousands of tons of this form of food cannot be other than a safeguard of the utmost importance.

How is the production to be stimulated? Only by a demand for it. Let the women experiment at once with the different brands of dried vegetables on the market, and demand those that they like from the retail dealers. The supply will be forthcoming as quickly as the vegetables can be grown.

Should 100,000 intelligent women order, to be delivered C. O. D., a few dollars' worth of these vegetables from the different reputable dealers, an immense stimulus to the art would be given, and a wide test would be made which would open the way to the permanent introduction of the modern dehydrated vegetable, which is essentially a new and most economical form of food.

The following firms are in a position to furnish samples of considerable size at cost, and will send them C. O. D. to any one who writes for them. They cannot afford to send them free, as the samples must be of considerable size to furnish material for several tests:

American Companies

American Dehydrating Company, Waukesha, Wis.
Anhydrous Food Products Co., 326 W. Madison St., Chicago, Ill.
Harry Bentz Engineering Co., 90 West St., New York.
California Scientific Food Corp., Los Angeles, Cal.
Casnovia Dehydrating Co., Casnovia, Mich.
Dayton Evaporating and Packing Co., Dayton, Oregon.
The Everfresh Company, Ogden, Utah.
Farm Products Company, The Dalles, Oregon.

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FIELD-WORKERS IN THE WOMAN'S LAND ARMY OF FRANCE

Wherever an acre in Flanders has escaped the torch of the invader the women of France are exerting every effort to make the farms bring forth their utmost yield. A movement is now on foot among the women of America to emulate this example of their sister farmers in Allied lands.

The Flanders Company, Detroit, Michigan.
J. H. Fowler Company, Westfield, Mass.
Fullard Drying Products Corporation, 119 S. Fourth St., Philadelphia, Pa.
E. Clemens Horst Co., 235 Pine St., San Francisco, Cal.
Dr. J. F. Kelly, Pittsfield, Mass.
Luther Manufacturing Co., Walla Walla, Wash.
Mark Process Drying Co., Chicago, Ill.
Northwest Evaporating Co., Cashmere, Wash.
Penn Yan Cider Company, Penn Yan, N. Y.
R. L. Pitcher Company, Caribou, Me.
Staps Fisheries and Packing Co., Neillsville, Wis.
Webster Products Corporation, 90 West St., New York City.
The Weiser Products Co., Weiser, Idaho.
Wittenberg King Company, Portland, Oregon.
The Williams Co., Greenville, S. C., sweet-potatoes only.

Canadian Companies

Chilliwack Evaporating & Packing Co., Chilliwack, B. C.
Dominion Products Co., Ltd., Vancouver, B. C.
Graham Products Co., Ltd., Bellville, Ont.

Community driers have been established, according to Mr. C. W. Pugsley, of the University of Nebraska, at Lincoln, Nebraska; at Belmont, Fremont, and University Place, Nebraska, and Glidden, Iowa.

It is suggested that the householders in a community cover with their first pound orders the whole list of manufacturers, and by comparing notes and samples they will soon discover which are the best for their uses.

The fact should always be kept in mind that this dried-vegetable industry is a new one, and that the quality of the product produced by the different firms varies greatly. Some are, no doubt, doomed to failure, whereas others are so excellent that they are bound to succeed. To praise or condemn all makes of dried vegetables from the sampling of a few brands is to generalize too quickly.

THE NATIONAL GEOGRAPHIC SOCIETY IN WAR TIME

By Major-General A. W. Greely, U. S. Army

THE year 1917 was one of broadened activities and of increased usefulness for the National Geographic Society. Its splendid record of an unparalleled increase in membership to 650,000 is the surest proof of the success which continues to attend its efforts to stimulate a national popular interest in the science of geography.

In its field-work, as well as in its activities for the diffusion of geographic knowledge, the past 12 months have been particularly fruitful, and its expeditions, especially the one to Mt. Katmai, the world's greatest volcano, and the Valley of Ten Thousand Smokes, have been crowned with signal success.

As an evidence of the Society's desire still further to enlarge its field of service and its sphere of helpful influence, the Board of Managers was unanimous in the wish to extend to President Wilson the invitation of Honorary Membership, the highest distinction within the gift of the organization.

It was recognized by the Board that the unexampled responsibilities of the present crisis in world history leave the President small opportunity for interests not immediately related to his executive duties, and his acceptances of honorary distinctions have been extremely rare. It was hoped, however, that the activities of the National Geographic Society along patriotic lines might have an especial appeal to the head of the government.

Happily, the President did appreciate and approve the numerous productive war-time activities of the Society, as well as its normal undertakings in the interest of the increase and diffusion of geographic knowledge. He cordially accepted the proffered honorary membership, which was presented to him in the White House on December 19, 1917, by a committee from the Board of Managers consisting of Hon. Franklin K. Lane, Secretary of the Interior; Brigadier General John M. Wilson, U. S. A.; Rear Admiral John E. Pillsbury, U. S. N.; O. H. Tittmann, President of the Society; Gilbert Grosvenor, Director and Editor; John Oliver La Gorce, Associate Editor; Hon. Henry White, John Joy Edson, Grant Squires, and the writer.

UPHOLDING THE HANDS OF THOSE IN AUTHORITY

President Wilson expressed his pleasure at the honor conferred and declared that his interest in scientific research had not waned, even though it had been diverted by the critical problems of the hour. He expressed the hope that in the happier days which lie before the nation he might resume his active participation in the researches of scientists and scholars.

In answer to an inquiry as to the best way in which the Society, through its 650,000 members and the millions of Americans whom it reaches regularly through its official organ, the National Geographic Magazine, could uphold the hands of those in authority during the war, the President clearly designated certain lines along which the diffusion of accurate geographic data would enlighten the American people and ultimately prove of concrete advantage to the whole world.

These suggestions, involving problems of a difficult and complicated nature, have impressed the Board of Managers as of special importance.

In determining the best methods of accomplishing these patriotic ends, as well as in carrying forward its regular work, the Society is fortunate in having the advice and assistance of many able and distinguished Federal officials charged with duties of the highest importance. Especially valuable to the Board of Managers is the active coöperation of the Secretary of the Interior, Hon. Franklin K. Lane.

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GENERAL VIEW OF U. S. MILITARY HOSPITAL NO. 1, FORMERLY KNOWN AS AMERICAN AMBULANCE HOSPITAL: PARIS

It is in this hospital that the members of the National Geographic Society have established two wards of ten beds each. A third ward will probably be established within the next few weeks. Funds sufficient to maintain these beds for one year have been subscribed by the members, and in addition to financial contributions there have been numerous donations of supplies and equipment for the convalescents.

A CONVALESCENT WARD IN THE UNITED STATES MILITARY HOSPITAL NO. 1

Many of the knitted and crocheted comforts which will be used in the National Geographic Society wards of this hospital are the handiwork of the 250 young ladies employed at the headquarters of the Society in Washington.

MR. TAFT NOW A MEMBER OF THE SOCIETY'S BOARD OF MANAGERS

The Board also feels particularly fortunate in the addition of Hon. William Howard Taft, former President of the United States, to its councils. Mr. Taft has for a number of years taken an active interest in the Society's undertakings, and for several successive seasons has been one of the distinguished speakers in its course of 20 lectures given each winter in Washington, as well as one of the foremost contributors to the NATIONAL GEOGRAPHIC MAGAZINE.

Mr. Taft succeeds on the Board the late Col. Henry F. Blount, whose loss to the Society was voiced in the following resolutions:

"In the fullness of his years, death has called from among us our colaborer and friend, Henry Fitch Blount, who for more than a quarter of a century was a member of the Board of Managers of the National Geographic Society, and for fifteen years a member of the Board's Executive Committee.

"The Board of Managers shares with the community of Washington at large the sense of loss sustained in the death of Colonel Blount. Endowed with fine judgment and keen foresight and possessed of a ripe business experience, he was a safe and enthusiastic counsellor in the tasks confronting the National Geographic Society. He will long be missed, but his lasting monument will be that he helped to lay the foundation of the Society's work so firmly that it will endure even when the builders are gone.

"*Resolved*, That this resolution be entered as a minute in the records of the Society and published in the Magazine, and that an engrossed copy be presented to the family of our faithful associate."

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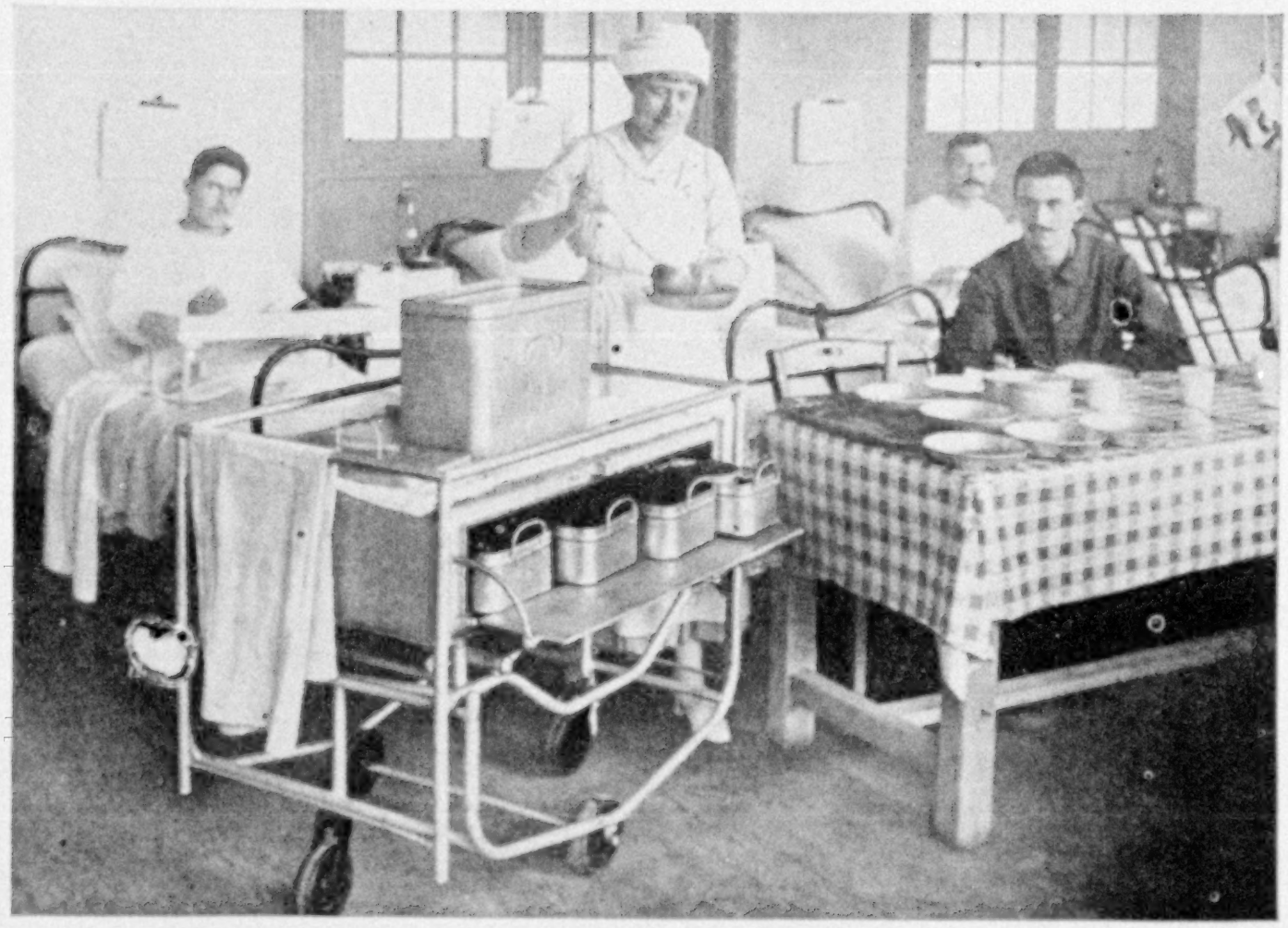


SERVING DINNER FROM A PERAMBULATING STEAM-TABLE IN A WARD OF THE UNITED STATES MILITARY HOSPITAL NO. 1, AT NEUILLY, PARIS

In the splendidly equipped building at Neuilly, one of the suburbs of Paris, the wounded are given every care which modern science can provide and every comfort which money can buy. It is a model base hospital.

THE SOCIETY'S RELIANCE UPON INDIVIDUAL MEMBERS

The Board of Managers of the Society relies upon the continued coöperation and support of the individual members in the furtherance of its effective service, both in patriotic endeavors and in the advancement of human knowledge.

The deep personal interest of the members in the NATIONAL GEOGRAPHIC MAGAZINE, so encouragingly reflected in thousands of letters of enthusiastic commendation and helpful constructive criticism, is a constant source of inspiration to the Board. The Flag Number in particular has been acclaimed a monumental achievement.

During the coming months the publication of many notable geographic, patriotic, and pictorial features will maintain, if not surpass, the standard set by the GEOGRAPHIC in 1917. In this connection it is worthy of mention that the Board of Managers, in view of the magnificent results achieved by the four National Geographic Society expeditions to the Mt. Katmai volcanic region, and especially the success of the 1917 expedition, the thrilling account of which was published in the February, 1918, number of the Magazine, a fifth expedition is now being equipped, under the leadership of Robert F. Griggs, and within a few weeks will sail for Alaska to complete the exploration and investigation of the Valley of Ten Thousand Smokes. For this expedition the Society has appropriated $8,000.

INVESTMENTS IN LIBERTY LOANS

The members of the Society will be gratified to learn that the Board of Managers has found it possible to invest $100,000 of the organization's reserve

"TEMPERATURE LOWER THIS MORNING, NURSE?"

The splendid courage which sustains the soldier of the Allies in the field is ever manifest in the hospital, and, though the bed be one of pain, a smile greets the nurse upon her hourly round. This is a scene in one of the military hospitals in Paris administered by the American Red Cross.

funds in the Third Liberty Loan. The Society invested $100,000 in the two previous Liberty Bond issues.

In the War Savings Stamp campaign the Society not only purchased the full amount allowed by government regulations to any one institution, but also organized a National Geographic Society Hundred-Dollar Club in the National Capital, and more than 1,400 members have pledged themselves to purchase one hundred dollars' worth of War Savings Stamps during 1918.

It is also a source of pride to be able to announce that the members of the Society have responded so generously to the opportunity afforded them to equip a National Geographic Ward in the American Ambulance Hospital at Neuilly, Paris, France (now known as U. S. Military Hospital No. 1), that funds sufficient to care for 20 beds for one year have been subscribed, and it is believed that a third Geographic Ward of 10 beds may soon be assured.

Not only have there been liberal financial donations for the support of these Geographic Wards, but many members

ONCE THE DEN OF SMUGGLERS, NOW A REFUGE FOR INNOCENTS FROM THE AIR RAIDS OF THE RUTHLESS

This subterranean retreat shelters 70 children from the dynamite death rained from the sky whenever the boche flies over the British Isles

in addition have sent special gifts of equipment and supplies for the invalided soldiers. Among the most interesting of the latter have been handsome knitted and crocheted comforts, many of which are the handiwork of the 250 young ladies employed at the headquarters of the Society in Washington.

The Society owes the success and development of its important war work very largely to the energetic and well-directed labors of its Director and Editor, Mr. Gilbert Grosvenor. Under his inspiration and direction were established and equipped the National Geographic Society hospital wards in France. At home, one of the Society's buildings, Hubbard Hall, has been transformed into an auxiliary establishment of Red Cross workers, while the several hundred employees in the Society's office have been organized into a helpful band of patriotic workers, and the Liberty Loan and War Stamp subscriptions have been very large.

In an early issue of the NATIONAL GEOGRAPHIC MAGAZINE the Editor hopes to publish a description of the National Geographic Wards, written by Carol K. Corey, whose recent graphic articles from the front, "From the Trenches to Versailles" and "Plain Tales from the Trenches," have won enthusiastic praise from Geographic readers.

The months that lie ahead are pregnant with opportunities for national service and for achievements in the increase and diffusion of geographic knowledge. With the sustaining support of each individual member, the Society cannot fail to prove equal to and worthy of these opportunities.

THE SYMBOL OF SERVICE TO MANKIND

The Greatest Humanitarian Movement of Modern Times Originated in a Practical Attempt to Meet a Practical Need with a Practical Remedy

BY STOCKTON AXSON

NATIONAL SECRETARY, AMERICAN RED CROSS

RED CROSS originated in a practical attempt to meet a practical need with a practical remedy. Sometimes a "movement" originates in an idea, and develops through successive attempts to put the idea into practice; but Red Cross began in practice and developed its "ideas" out of practical situations. Whimsical philosophers debate the question whether the hen or the egg "came first," but there can be no question about the precedence of practice and ideas in the origin of Red Cross.

Red Cross is perhaps the greatest humanitarian movement of modern times, which is of course equivalent to saying of all times, for humanitarianism is a thoroughly modern thing; but this particular manifestation of humanitarianism did not originate in theoretical notions of humaneness.

It began in a hospital and on a battlefield, with Florence Nightingale at Scutari and with Henri Dunant at Solferino, in actual nursing of sick and wounded soldiers in a base hospital, in actual salvage of wounded soldiers on a great and bloody battlefield. There was nothing vague or theoretical in the motive of Miss Nightingale or M. Dunant; it was as practical as rescuing a drowning man or twisting a tourniquet above a severed artery.

THE WAR CORRESPONDENT'S DISPATCH WHICH AROUSED ENGLAND

When the special correspondent of the *London Times*—he was William Howard

NATIONAL SURGICAL DRESSINGS DEPARTMENT AT ROME: SHOWING A STOCK OF SURGICAL DRESSINGS

Each morning the masses of whiteness mount ceiling high, only to melt away like snow by nightfall

Russell, probably the first war correspondent to render a great public service and win a conspicuous fame—sent despatches in October, 1854, from the front describing the deplorable conditions of the British troops in the Crimea, England was startled and aroused. Said he:

"It is impossible for any one to see the melancholy sights of the last few days without feelings of surprise and indignation at the deficiencies of our medical system. The manner in which the sick and wounded are treated is worthy only of the savages of Dahomey. . . . The worn-out pensioners who were brought as an ambulance corps are totally useless, and not only are surgeons not to be had, but there are no dressers or nurses to carry out the surgeon's directions and to attend on the sick during the intervals between his visits. Here the French are greatly our superiors. Their medical arrangements are extremely good, their surgeons more numerous, and they have also the help of the Sisters of Charity, who have accompanied the expedition."

This was in the middle of the nineteenth century—a century which, so far as England was concerned, was marked above all things by the growth of the democratic and humane idea. There had been more than twenty years of conscious reform through public agitations and parliamentary measures; extension of suffrage; one parliamentary bill after another providing for better working conditions in the factories and in the mines; for betterment of living conditions among the poor, especially with respect to women and children.

AN AGE OF "REFORMATORY" AUTHORS

A "school" of literature had sprung up, perhaps the greatest since "the spacious times of great Elizabeth," and the most popular of the many authors who were already making famous the term "Victorian Age of Literature" were those

DINING-ROOM OF THE RED CROSS CANTEEN AT THE GARE DE L'EST, PARIS

The Stars and Stripes and the Tricolor, which decorate the walls of this boon to tired troops, are indicative of the fact that all the canteens in Paris, as well as those at the front and at junction points along the lines of communication, are conducted under the joint direction of the American Red Cross and the French Government or the French Red Cross.

who were most humane, most "reformatory"—Dickens, Carlyle, George Eliot, Ruskin.

Dickens in particular had captivated all England with his humanity as well as with his humor, equally notable as humorist and humanist, and, best of all, basing an incorrigible optimism on the brave assumption that human misery is not "in the nature of things" and therefore unavoidable, but contrary to the nature of things and therefore remediable.

In one fascinating novel after another he had thundered this doctrine, all the more appealing because uttered in tones of hilarious laughter, the doctrine that if society would bestir itself society could cure its own evils; that where there is a will there is a way.

Never before, and perhaps never since, has a program of reform been so engagingly and so convincingly promulgated. Literati and statesmen, ordinary readers and ordinary voters, all alike were convinced that the world was well on its way to a vast betterment through society's intelligent determination to take charge of its own affairs.

Then the articles in the *Times* broke suddenly and rudely in on this optimism. Here were British soldiers of the nineteenth century suffering like the soldiers of the dark ages or of "savages of Dahomey." England's age-long military tradition combined with her new-found humanitarianism to stir the whole nation into angry protest. Something must be done! But what?

TWO PEOPLE SAW THE THING TO BE DONE

Fortunately alike for the immediate crisis and for the larger future, there were two people in England who saw clearly the thing that should be done—Mr. Sidney Herbert, one of the Secretaries of the War Department, and Miss

RECREATION ROOM OF ONE OF THE AMERICAN RED CROSS METROPOLITAN CANTEENS FOR FRENCH SOLDIERS

Coöperating with the French Army, one of the first activities of the American Red Cross in France was the organization of canteens, rest stations, and sleeping quarters for men on their way to and from the fighting front.

Florence Nightingale, then thirty-four years of age, born to considerable wealth and surroundings of superlative culture and refinement, but who had already devoted herself to the mission of developing a more intelligent system of public nursing—a woman of extraordinary ability, whose genius might have made her eminent in any one of several fields of endeavor, but who had chosen this *metier* which seemed strange to some of her friends and shocking to others.

As a young girl she had deplored the fact that the Protestant Church made no provision for the training of women, comparable to that which the Catholic Sisters of Mercy obtained, and had therefore welcomed an opportunity to go to Germany and study with Pastor Fliedner in his institute at Kaiserwerth on the Rhine.

Pastor Fliedner was the sort of German that many million other Germans would be if they would only wake up from their lethargy and cast off their abominable autocracy and militarism and give their own abundant better natures "a chance"—a kind, devoted man, seeking to make himself useful by showing others how to be useful. He had established, in a modest, practical way, an institute for the training of deaconesses in connection with a hospital, a penitentiary, an orphan asylum, and a normal school for the training of teachers.

FLORENCE NIGHTINGALE'S NURSERY NOVITIATE

In comparison with her own later and so much more scientific work of training nurses, Miss Nightingale found the nurse-training feature of the Kaiserwerth School crude and inadequate; but here she found mental and spiritual stim-

A CUP TO CHEER THE WOUNDED SOLDIER ON HIS ROAD TO RECOVERY

In the refreshment hall of an evacuation hospital scenes such as these are almost hourly occurrences, as men who are not seriously wounded are dismissed. The evacuation hospital is the institution through which the men customarily pass on their way to the base hospital.

ulation and many practical hints for her later career.

Above all, here she found what she had been seeking all through her passionate and purposeful girlhood—a way to be "of service to God" by being "of service to man." Intensely religious from childhood, she had never been satisfied with a religion whose chief object was the saving of her own soul. *Laborare est orare* might have been her motto, and here at Kaiserwerth she found a means of translating prayer into work.

Her novitiate ended, she returned to England and began the practical task of hospital nursing. She encountered many obstacles—some of the most stubborn from loving friends still opposed to what seemed to them the quixotic throwing away of a dazzling social career for the drudgery and meanness of hospital life.

That the brilliant Florence Nightingale, whose social gifts fascinated people of genius in letters and diplomacy, should deliberately ally herself with the Mrs. Gamps of the then humble, despised, menial, and frequently dissipated public-nursing service, seemed nothing less than an atrocity. But Miss Nightingale was as determined as she was brilliant and pursued her way in spite of opposition.

The point which sentimental biographers of Florence Nightingale miss is, that with all her gentler humane qualities she was like the sternest men of action in her will and purpose. Merely being "good" and "sweet" would never have carried her over her difficult road. Frequently she had to be hard, in the better way of hardness, the way of all great leaders and organizers and aggressive fighters against tradition and inanition.

A REMARKABLE COINCIDENCE

She was preparing to organize a school for nurses, modeled in part on the Kaiserwerth plan, when Russell's article ap-

SERVING A HOT MEAL TO WEARY SOLDIERS IN THE GARE DE L'EST CANTEEN, PARIS

There are three types of canteens operated or subsidized by the American Red Cross in France. The first is known as the Rolling Canteen, just behind the front line, where hot drinks, bouillon, lemonade, and mint are served to the men who are fighting or working close to the firing lines. The second class is known as the Line of Communication Canteen. In four canteens of this class 88 American women serve 20,000 soldiers daily. The third class of canteen is known as the Metropolitan, established in the principal railway stations of Paris.

peared in the *Times*. She had an intimate personal acquaintanceship with Mr. and Mrs. Sidney Herbert, as with so many of the political, social, and literary leaders of England, and she wrote a letter to Mrs. Herbert to be shown to her husband, saying that a "small private expedition of nurses" had already been organized which she proposed to take to Scutari, and asking if governmental authority could be secured for them.

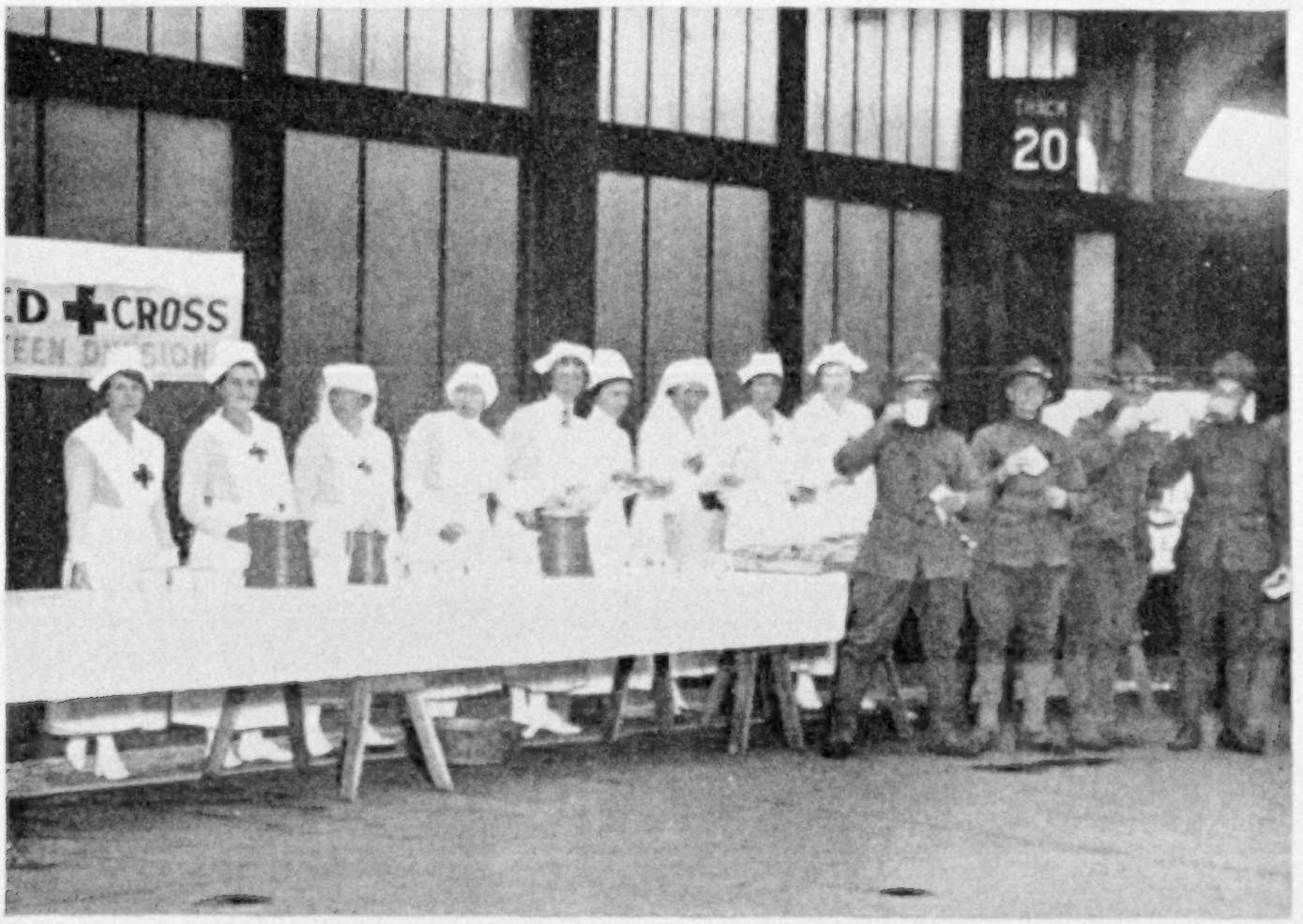
This letter crossed one from Mr. Herbert, inviting her to undertake this very task for the government. It was one of those coincidences not uncommon in the history of thought, when the same idea takes hold of different minds at the same time.

In view of the momentous results of this correspondence, it is not inappropriate to compare the coincidence with Darwin's and Wallace's simultaneous expositions of the evolutionary idea. So it was arranged that Miss Nightingale and her band of nurses should go to the Crimea in the autumn of 1854.

She reached Scutari ten days after the battle of Balaclava (which made the Six Hundred so famous) and one day before the battle of Inkerman. She had her hands full. Besides the wounded, there were the sick, and they perhaps made her chief problem.

TERRIBLE CONDITIONS IN THE HOSPITALS

The condition of the hospitals was almost unbelievable—floors and walls covered with filth, exposed sewers underrunning the hospitals and emitting their foul stench through all the wards, vermin and rats (she became so expert in rat-killing that she could slay a rodent over a sleeper's head without awakening him), sheets of tarpaulin so thick and rough



WINNING THE HEARTS OF SOLDIERS BY SERVICE

Before the establishment of canteens it frequently happened that soldiers waiting for trains at junction points would spend from 24 to 48 hours without any comforts, sleeping on the ground and getting practically no food. Now, thanks to the coöperation of the American Red Cross with the French Army, the men from the front are given wholesome meals below cost (15 cents per meal) and are provided with places to bathe and sleep.

that the poor sufferers pleaded to be left between the blankets and spared the luxury of sheets altogether.

Dysentery, typhus, and cholera were raging, and by February, 1855, the mortality had reached 42 per cent. The British army was in a fair way of being exterminated.

She had other difficulties than wounds and disease and unhygienic environment—the opposition of stiff conservative military officers, of the medical staff, and of religious sectarians. Sturdy old officers who had been wounded in the Peninsular campaign, thrown in carts on a bed of straw and who had recovered, could see no sense in all this modern flummery of ambulances and scrubbed hospital floors.

Such feminization of the army was abhorrent, and they angrily asked if they were to anticipate courts-martial held by women as the next effete step in this degeneracy.

WHAT FLORENCE NIGHTINGALE ACCOMPLISHED IN THE CRIMEA

Nor will it do to smile at this as a mere example of "British conservatism." A reading of some of the reports of our own military officers of as recent date as the Spanish-American War will reveal equivalent humors in the attitude of the stiffer sort of military mind toward the idea of women in the war zone.

What Florence Nightingale accomplished in the Crimea is a part of history—history too long and involved to be summarized in this brief article. But among the things she accomplished was this, the setting of an example of momentous consequence for subsequent events.

Among those inspired by her example

A RED CROSS SUPPER FOR WAR-ZONE REFUGEES IN THE CELLAR OF ONE OF THE GREAT RAILWAY STATIONS OF PARIS

While organized primarily to minister to the needs of French soldiers on their way back to the trenches or upon arriving from the front, the American Red Cross not infrequently acts the rôle of host to a gathering such as this in the Gare Montparnasse

was a young Swiss gentleman of leisure, M. Henri Dunant, like Miss Nightingale, of gentle birth and some fortune (afterward lost, so that his days ended in poverty).

On June 25, 1859, Dunant came upon the battlefield of Solferino, littered with the dead and the wounded of the Italian, French, and Austrian armies—a total, it is said, of 91,243 victims, including three field marshals and nine generals—the bloodiest battle since Waterloo and previous to the holocausts of the present battles of Europe.

Most of the medical corps of the armies had left the field, as regulations compelled them to, to accompany the retreating and pursuing armies. Dunant organized bands of volunteer helpers and transported the wounded to the neighboring village of Castiglione, where he housed them in hospitals and churches and wherever shelter could be found.

Afterward he wrote a book of his experiences, the most famous book in the annals of Red Cross—*Un Souvenir de Solferino*—a vivid description of what he saw and what he and others did. His assistants were the civilians of the neighborhood—women and children and some men.

He tells how the women of Castiglione went about ministering to the wounded without distinction of nationality, crying "Tutti fratelli!" seeing all suffering men as brothers, no matter under what standard they had fought.

The full account of all the anguish relieved by Florence Nightingale and Henri Dunant is written nowhere, unless it be in the book of the Recording Angel, of the thousands of dying men made more comfortable in dying and of wounded and sick men saved from dying.

THE RED CROSS SPIRIT BORN AT SOLFERINO

But the far-reaching consequence of what these two did is being written daily in the activities of the Red Cross of the present. Every Red Cross nurse, and ambulance driver, and canteen server, and surgical-dressings maker, and knitter of soldier comforts is carrying on the work begun by these two in the 1850's.

This article began with the assertion that Red Cross originated in the most practical way, but now note the supplement to that statement. Each of these pioneers—Nightingale and Dunant—derived a great idea from practical work accomplished and service rendered in the exigencies and emergencies of battlefield and military hospital.

Each was a philosopher as well as a practical person, and, indeed, no greatly lasting work has ever been done or ever will be done without some sort of philosophy lying behind it or underrunning it or growing out of it. Each of these explorers in the field of suffering planned for the future on the basis of their experience of the needs of suffering soldiers. Each might be called an advocate of preparedness.

Miss Nightingale developed the whole modern system of scientific nursing and made forever impossible the atrocities and inadequacies and absurdities which Dickens satirized in Mrs. Gamp and Betsy Brigg; to which Miss Nightingale added epoch-making work in military sanitation in her studies of the condition of the British army in England.

THE VISION AND THE PLAN OF DUNANT

Henri Dunant originated the idea of permanent volunteer relief societies in all civilized countries, which in times of peace would prepare to meet the exigencies of war and in every way possible supplement the work of the regular army medical corps, which always has been and always will be unable to deal with the misery of war unsupported by volunteer assistance.

To organize this assistance and to correlate it with the army sanitary corps, in strict and loyal subordination to the army commanders, by means of permanent societies, was the vision and the plan of Dunant.

The purpose of *Un Souvenir de Solferino* is twofold: First, to make clear and vivid the actual horrors of war, and, secondly, to suggest means by which permanent societies might be established, always working under the authority and with the consent of the military powers. "Would it not be possible to found in all the countries of Europe societies which could give voluntary aid in time of war to the wounded without distinction of nationality?" so he writes.

XUM

VOLUNTEER WORKERS IN THE KITCHEN OF ONE OF THE TWELVE CANTEENS CONTROLLED OR SUBSIDIZED BY THE AMERICAN RED CROSS IN PARIS

In the Metropolitan canteens alone nearly 3,000,000 soldiers have been fed during the last four months. Up to the present time the number of American soldiers entertained at the Paris canteens has been comparatively small, but it is constantly increasing.

His two governing ideas were *permanence* and *neutrality*. "Sans distinction de nationalité" runs through the book like a musical motif. Undoubtedly he meant more by "neutrality" than has proved practicable in the actualities of warfare. Nurses and doctors cannot be drained of their patriotism, nor is it desirable that they should be, especially when the German autocracy is the enemy. But the neutrality idea does still pervade Red Cross with respect to the actual wounded.

DUNANT'S EFFORTS BEAR FRUIT AT GENEVA

American Red Cross will, of course, render no aid whatsoever behind the German lines, as it will permit no other traitorous act of giving comfort to the enemy; but when the German soldier falls wounded within the Allies' lines, he gets Red Cross care, for he is no longer an enemy; he is only a suffering man.

Dunant agitated his ideas by speech and by visits to various courts of Europe, and the result was that, with the coöperation of the Geneva Society of Public Utility, a humanitarian organization which had existed since far back in the eighteenth century, there was held in Geneva a conference in 1863 to consider ways and means of organizing and operating allied societies of relief in all European countries, functioning through a central society with headquarters at Geneva.

This was not a diplomatic convention, but a conference of representatives of various European powers to take counsel as to methods of permanent provision for the care of sick and wounded soldiers. Ten articles were framed to govern the organization and operation of these societies and their agents in the theater of war, Article XIII stipulating that "they shall wear in all countries, as a uniform distinctive sign, the white arm badge with a red cross on it"—this being the Swiss national colors in reverse.

As a result of this conference, there was held in Geneva, in 1864, another conference, this time with diplomatic authority, for the purpose of dealing, not with voluntary societies, but with the whole question of the rights of the wounded and of the army medical corps. This resulted in the famous 1864 "Convention," or "Geneva Treaty," which wrote the rights of wounded and of those who succor them into the laws of nations.

The United States had had no representative at the 1863 Conference, but was 'informally" represented at the 1864 Convention. The Department of State expressly stipulated that the representation must be informal, both because of the American tradition of non-participation in European alliances, and especially because the United States was then engaged in a civil war and could not submit its affairs to what it feared might prove to be an outside interference.

THE UNITED STATES NOT SIGNATORY TO THE 1864 TREATY

But though the United States was not signatory to the 1864 Treaty, and though its representatives did not participate in debate on the floor of the Convention, the United States was powerful in determining the course which the Conference took and in the character of the resultant agreement, for the United States had in practical operation, working under war conditions, the first actual permanent military relief association, the United States Sanitary Commission.

What had been learned in experience by this Commission was made clear to the European delegates to the Conference by Mr. Charles S. P. Bowles, an agent of the Sanitary Commission, who had been authorized to attend the Conference in company with Mr. George W. Fogg, United States Minister to Switzerland.

Mr. Bowles wrote an intimate account of the extra-legal proceedings of the Conference, of the many conversations and colloquies held in his pleasant hotel rooms overlooking the lake: "I availed myself of all suitable occasions to impress upon the members the character and extent of the great work done, and doing, to mitigate and alleviate the sufferings of the sick and wounded—whether friend or foe—by the men and women of the United States. . . . Generally it was admitted that our people in America have *practically* solved pretty much all the questions which this international congress was met to consider."

XUM

GENESIS OF THE UNITED STATES SANITARY COMMISSION

And now the story returns to Florence Nightingale and to the British Commission which followed her to the Crimea in April, 1855. Charles J. Stille, in his "History of the United States Sanitary Commission," makes it very clear that the Commission owed its existence to the experiences of Great Britain in the Crimea!

"At that time the experience of the Crimean War was fresh in the memory of all. That experience was a complete chapter by itself on sanitary science. It taught the great truth that the 'cause of humanity was identified with the strength of armies.' We were left to no vague conjecture as to the causes which produced the fearful mortality among the allied troops before Sevastopol. . . . Public opinion in England, indignant and horror-stricken at this frightful result, long before the war closed, called loudly for investigation and remedy.

"The result has been a contribution of inestimable value to our knowledge of everything which concerns the vital questions of the health, comfort, and efficiency of armies. The results of these investigations, both in regard to the causes of the evil and the wonderful efficiency of the remedies which were applied for its removal, had been recently given to the world in parliamentary reports, in the works of professional men, and especially in the invaluable testimony of Miss Nightingale; so that all the conditions of the problem were perfectly known, and its solution could be arrived at with the exactness and certainty of a scientific demonstration."

PREVENTION THE WATCHWORD OF THE SANITARY COMMISSION

As the watchword of Dunant was *Permanence*, so the watchword of the United States Sanitary Commission was *Prevention*. The Commission originally proposed to act in an advisory capacity to the government in general matters of sanitation, but it rapidly grew into a central committee for most of the organizations of volunteer relief in the North; was in fact the first organized practical Red Cross association, though it did not bear the name. The advice of Mr. Bowles seems to have carried special weight with the delegates to the Geneva Conference in matters concerning the so-called neutralization, or inviolability of the wounded and those attending upon them.

It will interest the readers of the South to know that General Beauregard seems to have been the first officer in the Civil War to suggest the systematic and invariable recognition of the rule that surgeons should be treated as non-combatants and released if taken prisoner.

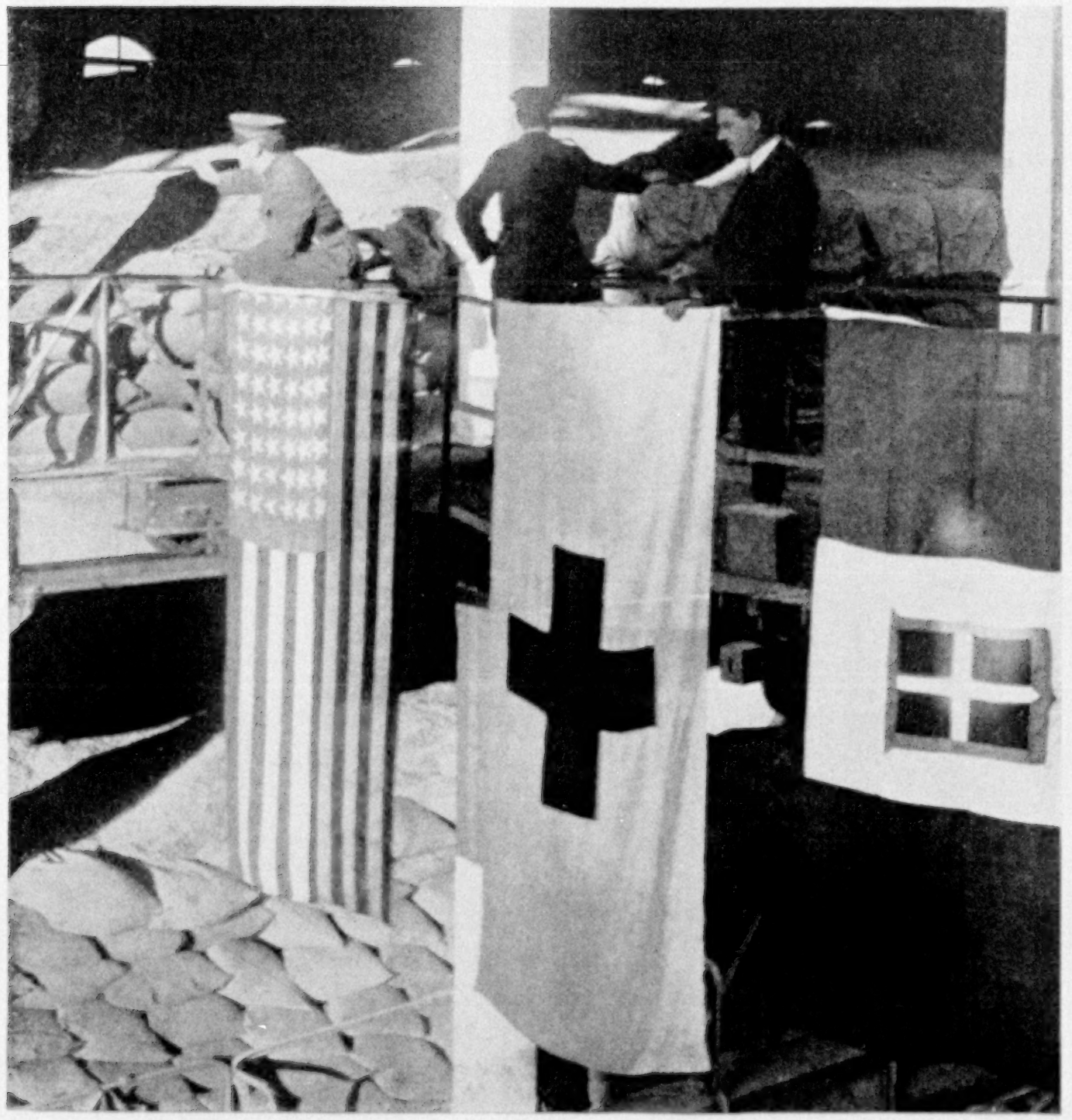
There seemed to be some question in the minds of the delegates to the Geneva Convention as to whether this so-called principle of neutrality was practicable, but Mr. Bowles seems to have been able to convince them that it had proved quite practicable in the traffic between the armies of the North and the South.

A UNIVERSAL SIGN ADOPTED FOR THE SANITARY CORPS

The 1864 Conference did not consider the question of volunteer societies—that had already been dealt with in 1863—but it adopted a "Convention" of ten articles looking toward the inviolability, or "neutrality," of the medical corps and the wounded, ambulances, military hospitals, personnel, and even the civilians within the theater of war who should render aid to the wounded, and it adopted a universal sign for the sanitary corps of all armies alike—"The flag and arm badge shall bear a red cross on a white ground."

Hitherto each nation had had its own sanitary corps insignia, usually unrecognized by the enemy, even though the enemy should have wanted to protect the medical and nursing contingents.

Such, briefly summarized, is the way Red Cross began. The history of later conventions, developments, and modifications is too long for the purpose of this article. What is being emphasized here is that a practical beginning, combined with a characteristically nineteenth century humane idea, has led to the far-reaching and manifold modern Red Cross, which has been amplified until it includes almost every conceivable activity designed to lessen human misery, not merely in the stress of war, but in great natural calamities.



UNDER THREE FLAGS IN ITALY

The Stars and Stripes and the banner of the American Red Cross hang side by side with Italy's ensign, which displays the cross of the House of Savoy, in the warehouse at Rome where Red Cross supplies are stored.

"UNTIL THE GERMAN AUTOCRACY SUDDENLY WENT MAD"

Indeed, until the German autocracy suddenly went mad (and it is comforting to remember the ancient adage that "whom the gods destroy they first make mad"), it was considered by those most concerned with American Red Cross that its chief function would be to relieve the misery incident to floods, conflagrations, earthquakes, famines, and similar natural catastrophes.

Those who were active in raising the Red Cross Endowment Fund a few years ago found that their chief difficulty lay in convincing the people of America that there was really any need of an elaborately organized war-relief society, for war seemed a remote contingency to the American people, and it was only by emphasizing the value of a permanent relief

society for those emergencies due to natural causes that the people were persuaded to contribute in any large sum to Red Cross.

But we reckoned without the Hohenzollerns. These disturbers of the world's peace have brought many changes to the American mind, among them a total change in the conception of Red Cross, its needs, and its opportunities. The immediate business of American Red Cross is to mobilize the relief agencies of America for the most destructive and the most merciless of all wars.

TWO MAIN CONCEPTIONS OF THE AMERICAN RED CROSS

In doing this it works under two main conceptions: to relieve (and, as far as possible, to prevent) the misery incident to war and to assist in maintaining the morale of the fighting forces.

To lessen the fighting man's misery and to keep him fighting—these seem, superficially, contradictory motives; but all who believe in that just peace which can be the only lasting peace know that it is superlatively important to keep our own soldiers and our allies on fighting edge until the German beast is beaten. The world will never be habitable until that is accomplished.

Red Cross is rooted in a humane idea; but the world cannot be made humane until German inhumanity has been brought to a stop; and so long as those who now control Germany remain in control, this can be done only by speaking to them in louder tones than their own, the only language which they comprehend—the language of force.

After the humane nineteenth century, we had reason to prognosticate a yet more humane twentieth century. But Germany has confused the horoscope; she has made the most astounding assault on humanity in the history of the world, welding to the brutishness of the Hun the ingenuities, resources, and cruel refinements of perfected science.

THE TUSKS OF THE PRUSSIAN BOAR MUST BE DRAWN

The first business of the civilized world is to draw the tusks of the Prussian boar, and Red Cross is exerting its utmost endeavor to serve the army and the navy in their accomplishment of that end. While Red Cross does all it can to comfort the wounded soldier, it adopts every device it can conceive to make the well soldier a better fighting man.

Hence its canteens, and rest stations, and all its coöperation with the government, with Y. M. C. A., and with all other war agencies, to render the soldier life as tolerable, as comforting, and as heartening as possible.

But it goes back of the soldier to the soldier's family. If there is any outstanding lesson which Red Cross has derived from its experiences in this war as overtopping all other lessons which it has learned, it is this: that the morale of the soldier depends almost as much on having his family cared for as on having himself cared for.

Though he be warm within and without and given every known modern device for soldier comfort, he will be at something less than his best if he is harassed with anxiety about the wife and children, the old father and mother, behind the fighting line, within the zone of war or beyond it, or even across the far-stretching Atlantic Ocean. In this conception of the complete duty which the people owe their soldiers, the Red Cross Department of Civilian Relief has become almost as much a war department as the Department of Military Relief.

CIVILIAN RELIEF WORK

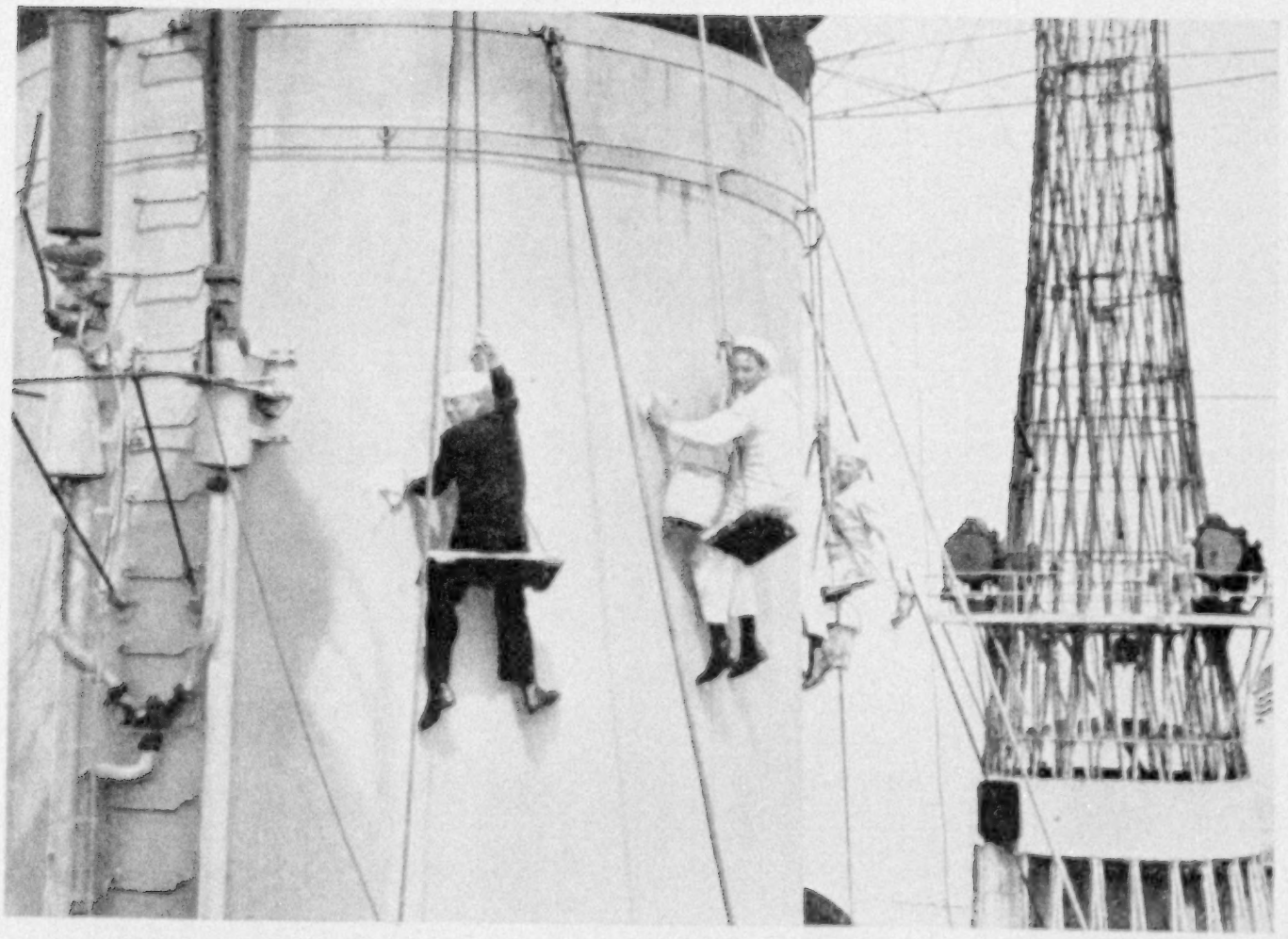
That the soldiers' families may be served intelligently as well as generously, the Civilian Relief Department has organized its Home Service institutes, where workers are trained by the most modern and scientific methods to render every conceivable kind of help that is needed, including that most helpful and most delicate and most difficult of all help, the help which helps people to help themselves.

This, of course, is nothing more than the modern science of social service rendered to people as a war measure—that science which combines in a delicate and intricate way the quality of mercy with a clear understanding that mere promiscuous "charity" may be of all things the least kindly in the end.

Photograph from J. T. Dye

MASTER EDWARD T. DYE, AGED THREE AND A HALF, SELLING W. S. S. IN NEW YORK CITY

Says he is going to sell $1,000.00 worth and is making good his promise, with a band to back him up



© Underwood & Underwood

FIRST THE SCRUB-DOWN, THEN THE WAR PAINT

Before the art of "camouflage" came into existence, battleship-gray was the hue of our fighting craft in time of strife. Now the world's warships are streaked and striped blue, green, and black, to simulate the waves at a distance.

XUM

To preserve people from deteriorating through neglect, and at the same time to preserve them from deteriorating by growing dependent on the easy bounty of others, this is, of course, the primary lesson in all rational and responsible social service, and this lesson must be learned by many who would assist the families of soldiers, not sentimentally and to their destruction, but really and to their betterment. Hence the Home Service institutes which are held all over America and in which those who really wish to be of service can learn the difficult lesson of acquiring science without losing their susceptibilities to pity.

RED CROSS EDUCATIONAL WORK

This work is, of course, educational in its most far-reaching aspect, and to this work of education, Red Cross has added another in its Junior Auxiliary—a plan whereby the school children of the country are enlisted in Red Cross activity, not for the sake of their membership fees, because these fees are never applied to the general purposes of Red Cross, but are used entirely to promote the children's own activities; not primarily, either, for their production of Red Cross articles, knitted goods, etc., but primarily for the education of the children themselves in foundational principles of citizenship and the application of citizenship to war conditions.

So far from undertaking to exploit the school children of America for Red Cross activity, the Junior Auxiliary seeks rather to make Red Cross the coördinating agent of all their war activities, and thereby to save the time of the school children rather than to add an extra burden to the already too many burdens of extra-curriculum activity.

"NOTHING STANDS ALONE"

These extensive educational ventures may seem far afield from the thoughts which Henri Dunant had in mind when he and the women of Castiglione were bearing bleeding and groaning soldiers from the battle ground of Solferino, and when the thought shot through his brain that there should be a permanent organization for this sort of relief.

Certainly the idea could not have occurred to him then that this single thing that he was planning should develop into so complex a matter as the modern Red Cross, with so many ramifications and so many unsuspected opportunities translated into far-reaching duties. But this is merely an example of that great fact of the universe of which all philosophers are conscious, that nothing stands alone, but everything exists in relationship to something else and each in turn is related to all.

A wounded soldier is a very concrete fact, but when humanity has undertaken to care for that soldier it cannot stop until it has done everything that will rationally administer to his welfare. And so, step by step, Red Cross has grown in a quite logical way from physical service to a wounded man into this great complex machinery which touches the soldier's interests at every point, and which, for its true functioning, must invade the fields of education itself.

The three essentials to a perfect Victor reproduction

Victrola Victor Records Victor System of Changeable Needles

Because Victor Records and Victor Instruments are scientifically coordinated and synchronized in the processes of manufacture, their use, one with the other, is absolutely essential to a perfect reproduction.

When you want to hear Caruso—or any other of the world's greatest artists—just as he actually sings in real life, it is necessary to play his Victor Record with a Victor Needle or Tungs-tone Stylus *on the Victrola*. That is the instrument for which the record was made, and only by their combined use is the true tone of the artist faithfully reproduced.

There are Victor dealers everywhere and they will gladly demonstrate the various styles of the Victor and Victrola—$10 to $400—and play any music you wish to hear. Period styles to order from $375 to $950.

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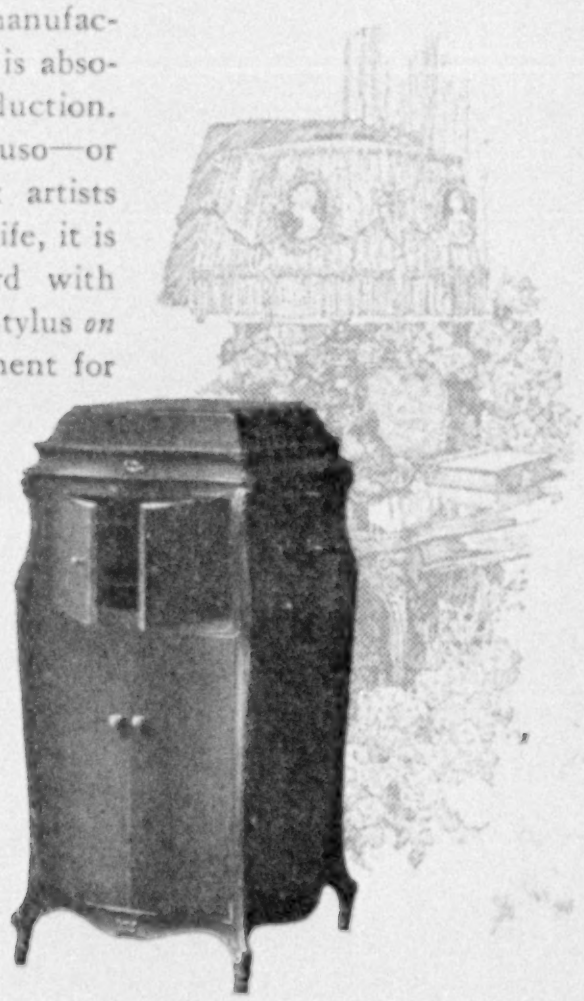
Berliner Gramophone Co., Montreal
Canadian Distributors

New Victor Records demonstrated at all dealers on the 1st of each month

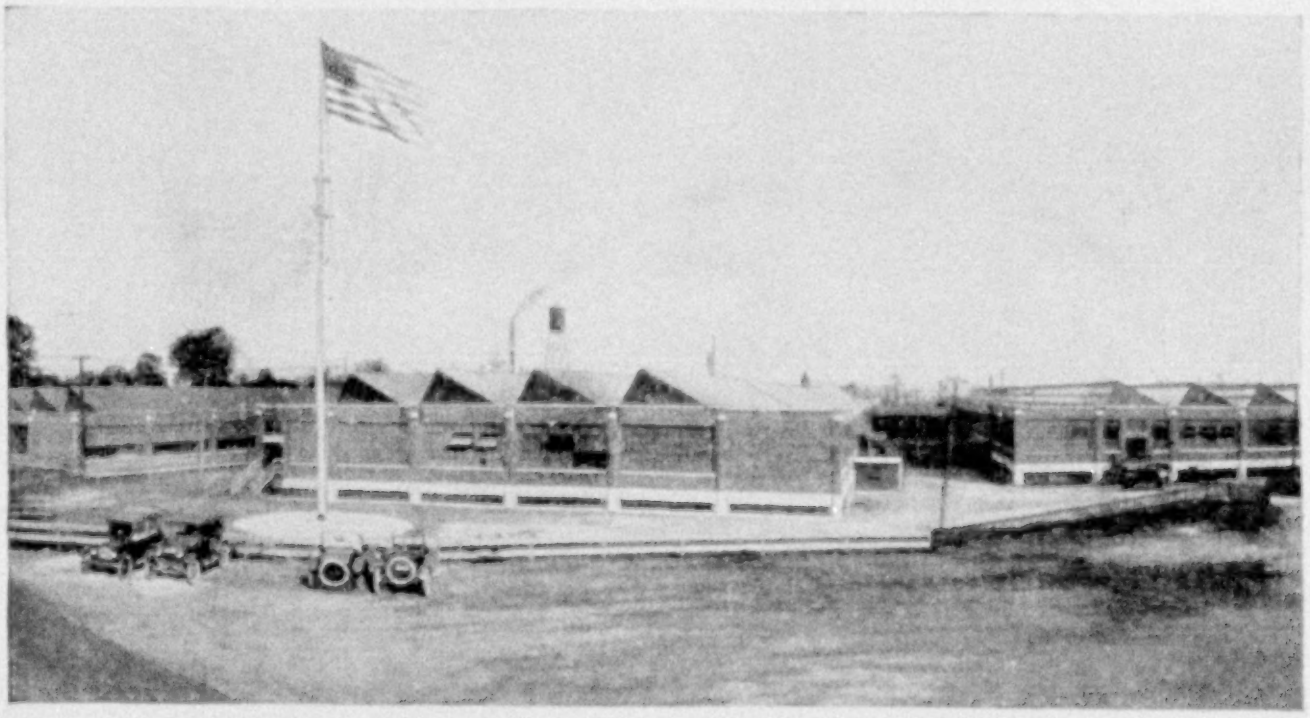


Victrola XVII, $265
Victrola XVII, electric, $325
Mahogany or oak

Encourage a Comfortable Longevity

¶By an immediate provision for a care-free old age for yourself, your wife, yourself and wife, or any one for whom you desire to anticipate and relieve the problems of old age.

Write the
NATIONAL LIFE INSURANCE CO., Montpelier, Vt.
for the booklet, "What Are Annuities?"



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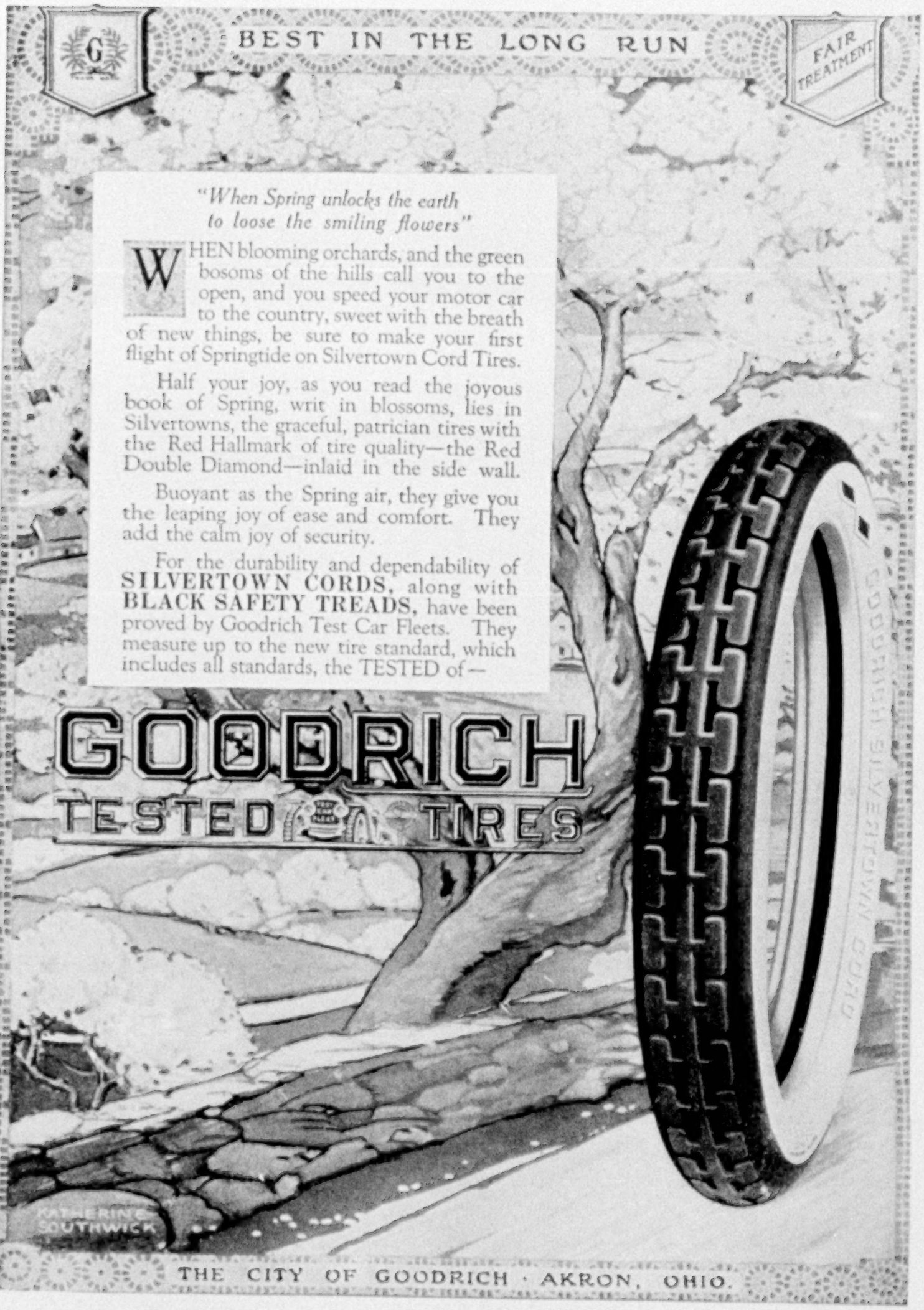
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FAIR TREATMENT
"When Spring unlocks the earth
to loose the smiling flowers"
WHEN blooming orchards, and the green bosoms of the hills call you to the open, and you speed your motor car to the country, sweet with the breath of new things, be sure to make your first flight of Springtide on Silvertown Cord Tires.
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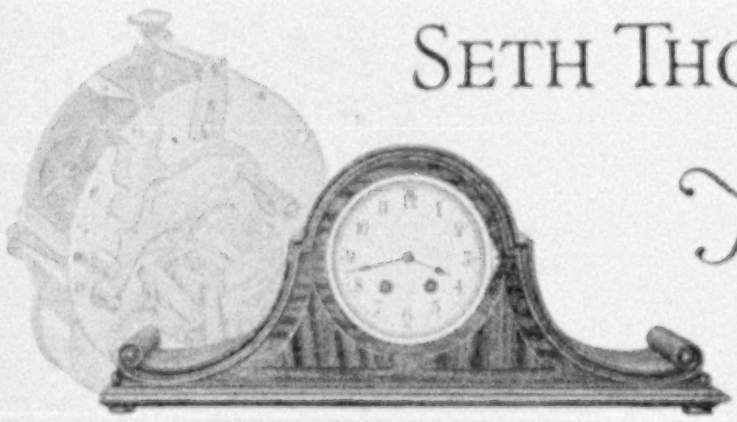

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in the

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in the American Ambulance Hospital at Neuilly, in the environs of Paris.

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Alone in the midst of war's desolation, the telephone lineman crawls to mend the broken wires.

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The safety of the troops depends on these lines of communication, often used for the sentries' warnings, the carrying of official commands and the summoning of reinforcements.

In a dark hole hidden among sparse brushwood are the telephone operators, some of whom have been for months in their damp cave ceaselessly swept by shells.

And they are admirable, all these heroes of the Signal Corps, whether serving in darkness or in the all too bright light of day.

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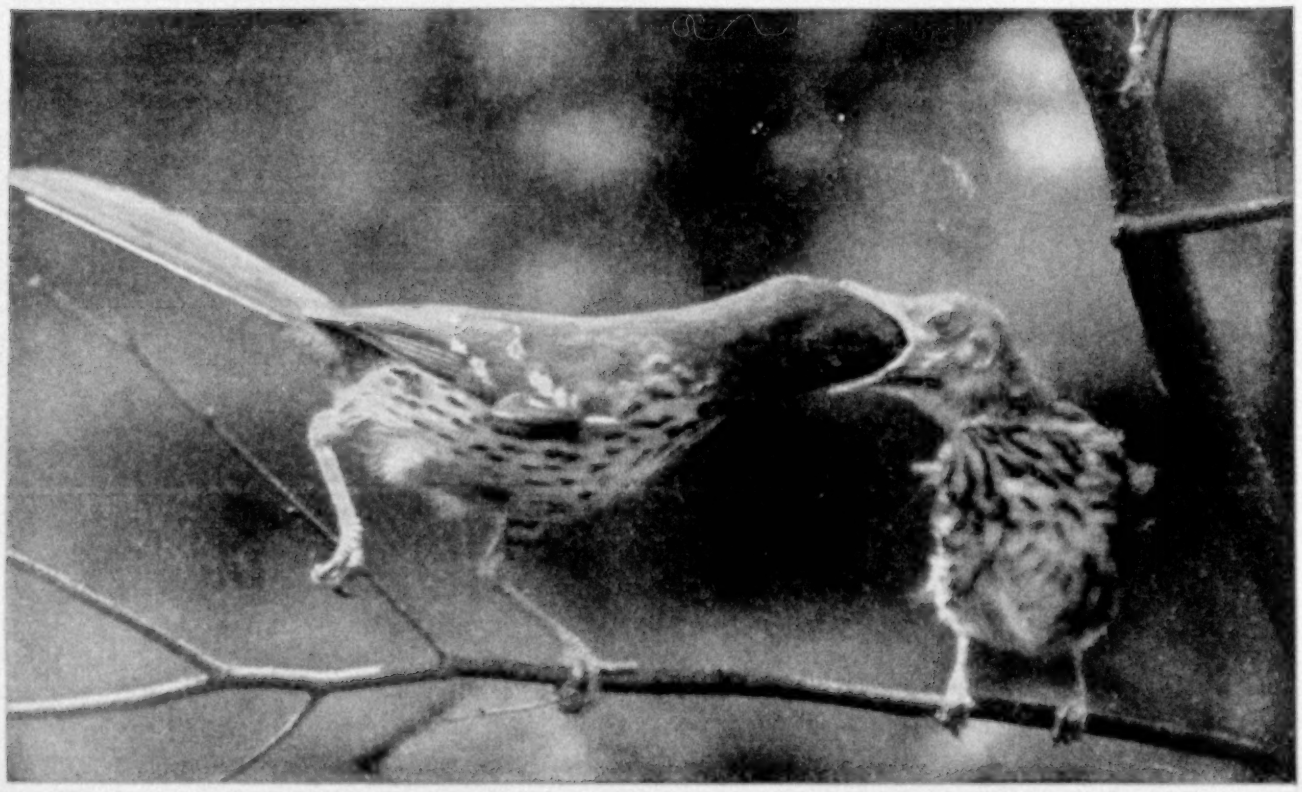

MOTHER IS TAKING NO CHANCES OF LETTING HER LITTLE ONE SPILL ON ITS CLEAN DRESS: A BROWN THRASHER FEEDING ITS YOUNG

Make Friends with Nature's Feathered Wards in

THE BOOK OF BIRDS

200 Pages, Illuminated with 250 Matchless Subjects in Full Colors, 45 Illustrations in Black and White, and 13 Striking Charts and Maps

No other Nature-book ever published at a moderate price equals The Book of Birds in the beauty of its illustrations, the fascinating quality of its authoritative text, and the charming intimacy with which it introduces the reader to shy Friends of Forest and Countryside, Seashore and Upland.

The three principal divisions of this beautiful book are the contribution of the gifted ornithologist and facile author, Henry W. Henshaw, formerly Chief of the United States Biological Survey. Dr. Henshaw possesses to a marked degree the rare faculty of describing the haunts and habits of Nature's wild creatures with the ease and grace of the born story-teller and with the insight and knowledge of the scientist equipped by wide experience and exhaustive research. And no author has ever had a more gifted or more sympathetic illustrating collaborator than has Dr. Henshaw in the noted naturalist-artist, Louis Agassiz Fuertes, whose 250 bird portraits, reproduced in full colors in this superb volume, have preserved with wonderful fidelity not merely the richness of tint in plumage but the animation and the personality, so to speak, of each subject.

An engaging chapter is contributed by F. H. Kennard on "Encouraging Birds Around the Home." Mr. Kennard persuades the reader to become a conserver of bird life, whether he be the possessor of a great estate or the owner of a window-sill.

That mysterious impulse which Nature has implanted in so many of her creatures—the migrating instinct—is the subject of a wonderful chapter by Professor Wells W. Cooke.

George Shiras, 3rd, noted as a traveler and naturalist and as the inventor of a method whereby birds and wild animals make their own portraits, gives a delightful account of photographing wild birds with a flashlight camera.

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4-18

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135% against the 12% Increase of All Other Fine Cars

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A high resale value—instead of a fire-sale price.

And based squarely on these demonstrated records, sales of the Franklin Scientific Light Weight Car increased last year 135%, against the 12% increase of all other fine cars.

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These features are worth your immediate inspection, for they have a direct bearing on your motoring satisfaction in 1918.

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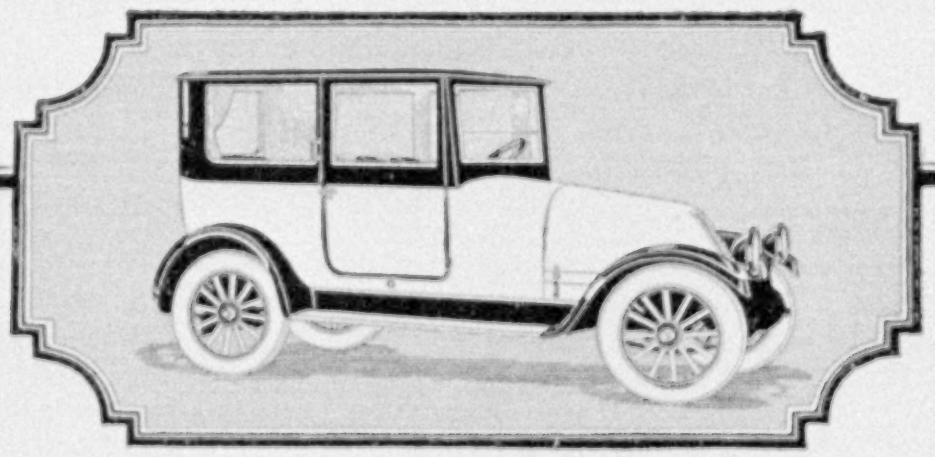

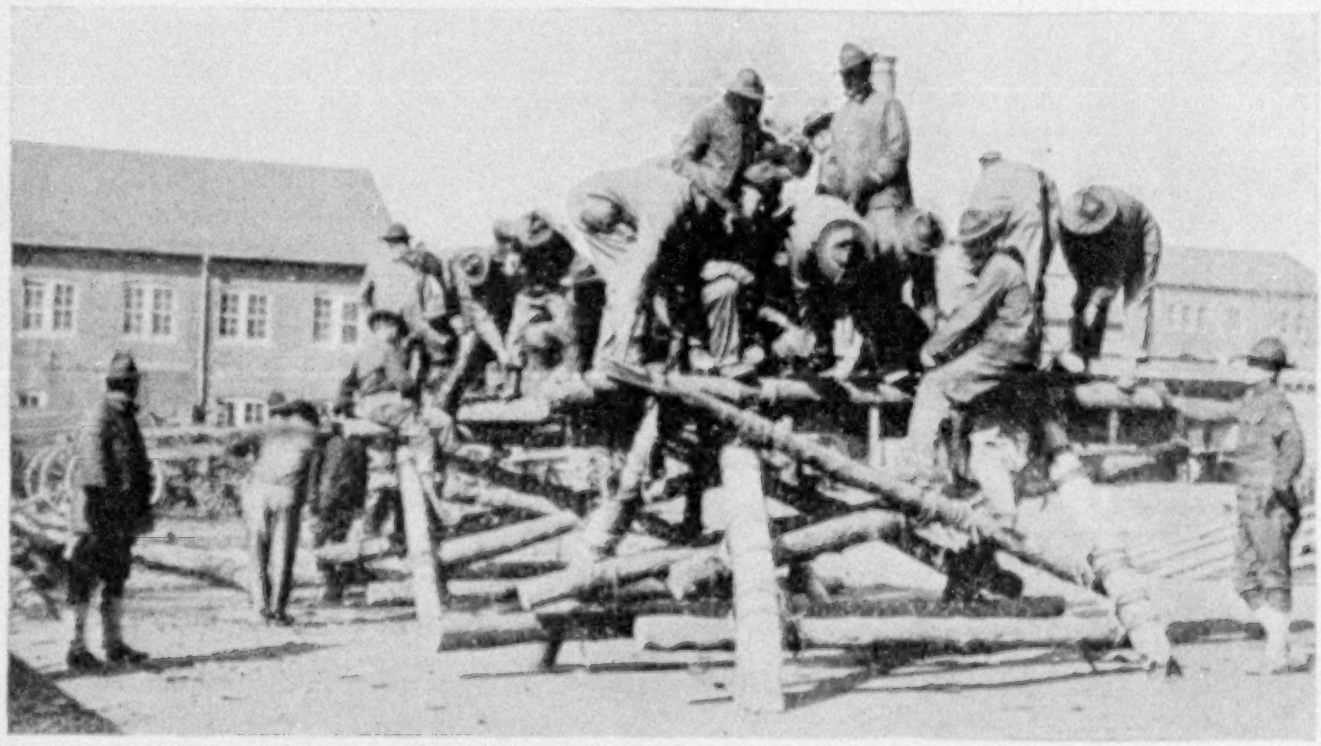

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Full information furnished by the

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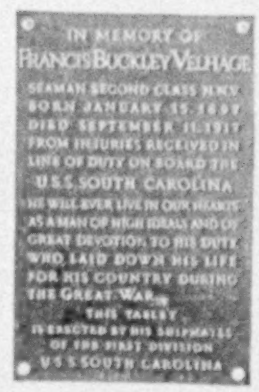

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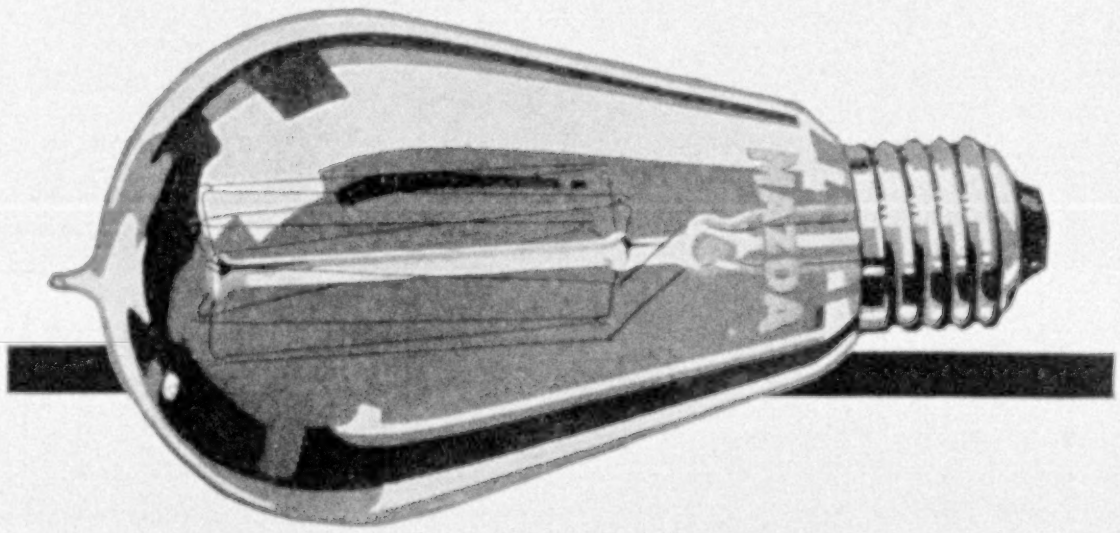
4-18



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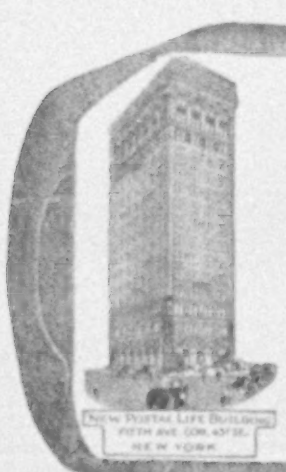

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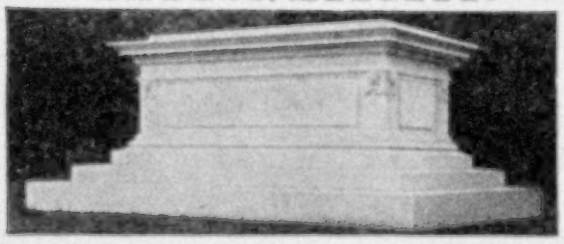

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The copyright notice must appear on each slide. The purchase of lantern slides does not carry with it the authority to publish the pictures and they cannot be used for advertising purposes.

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WASHINGTON, D. C

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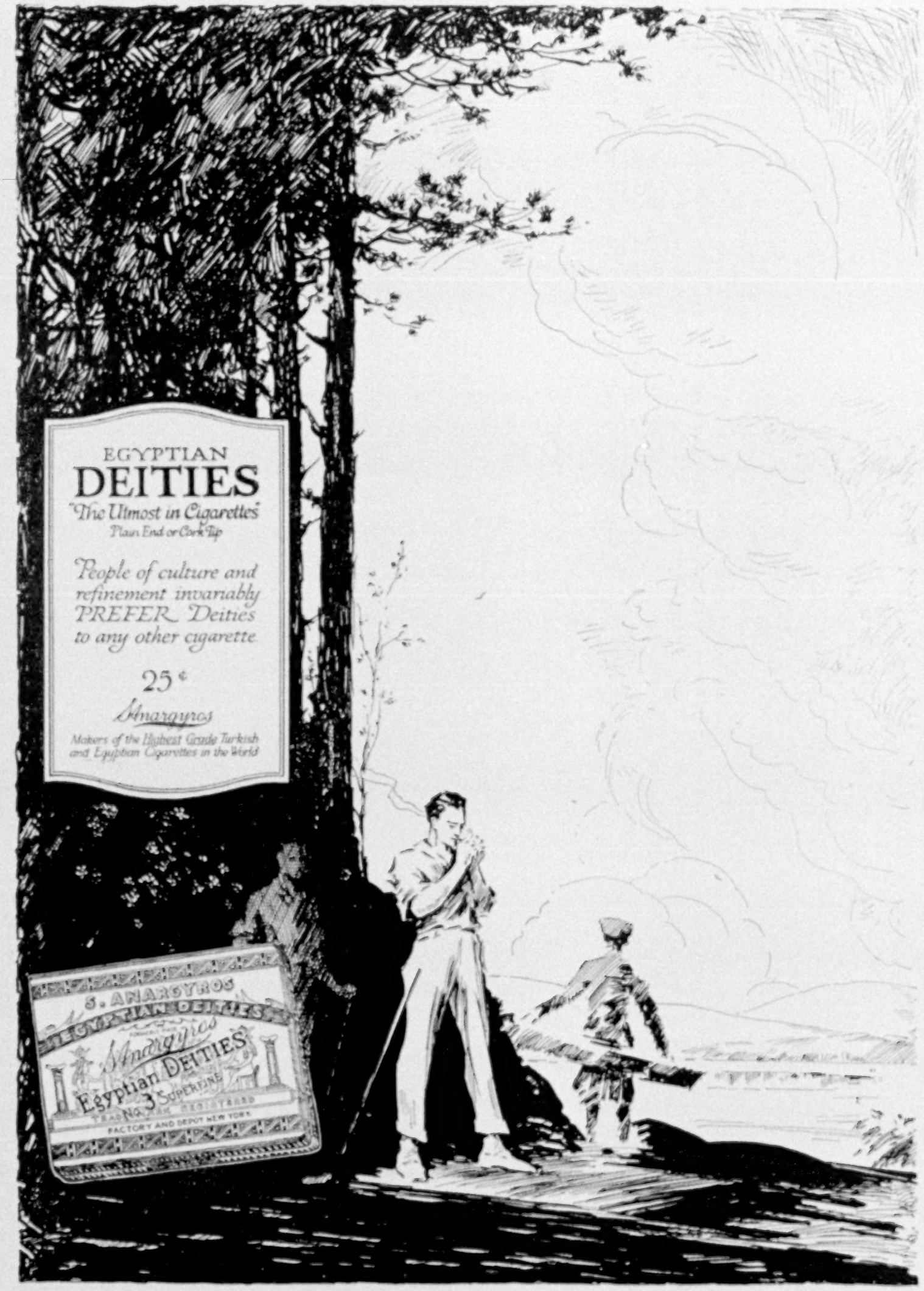
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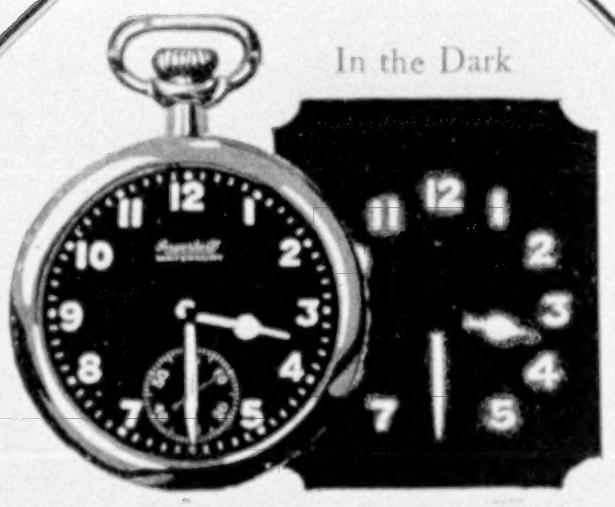

Waterbury Radiolite $4.50 *In Canada $5.00*

A STYLISH, small size watch—constructed for reliability and accurate timing. It is jeweled at points of greatest friction and will stand years of hard usage. The case is solid nickel.

Real radium makes the substance on the figures and hands glow and show time in the dark. This luminosity is guaranteed for the life of the watch without need of exposure to the light.

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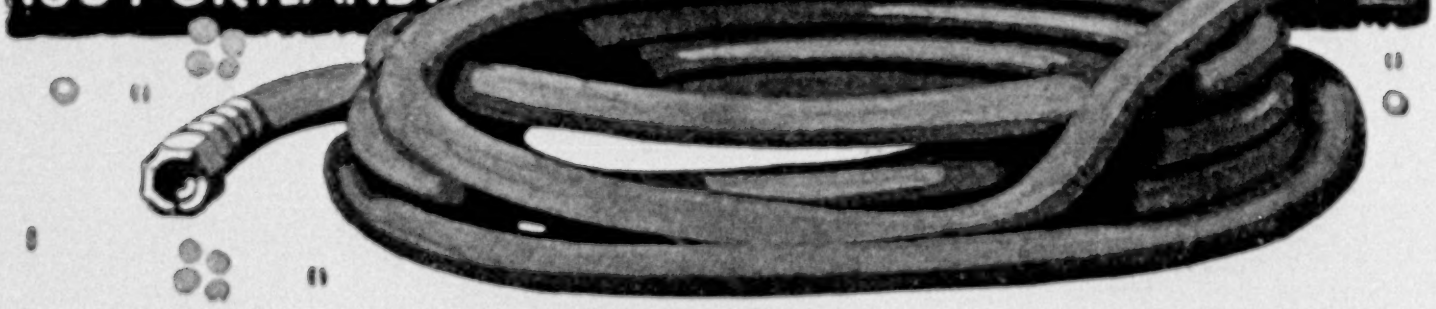

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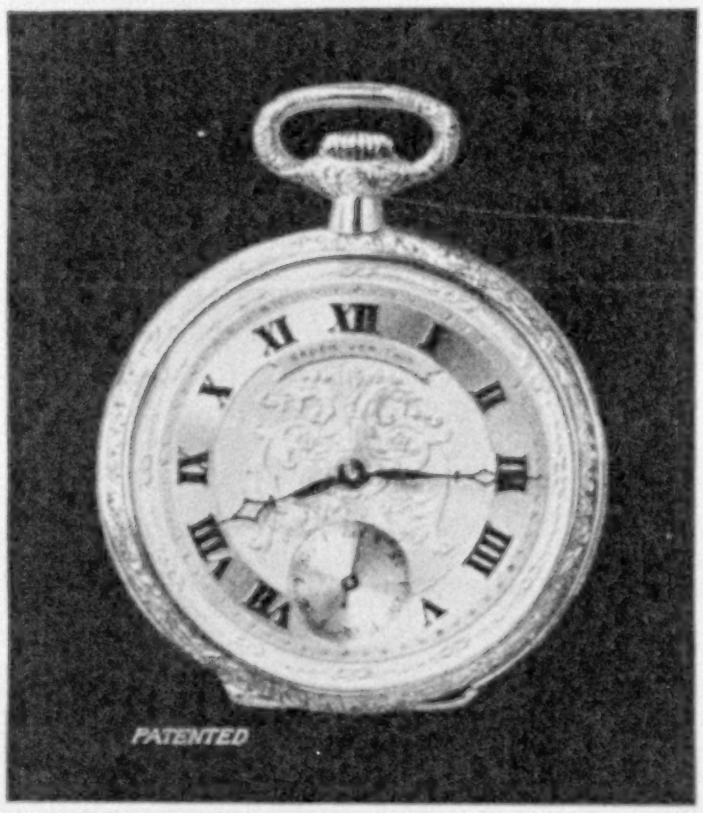

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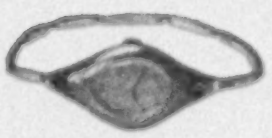

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